802

SERVICE MANUAL

FISHER

QUARTZ SYNTHESIZER DIGITAL TUNER

FM-9060R

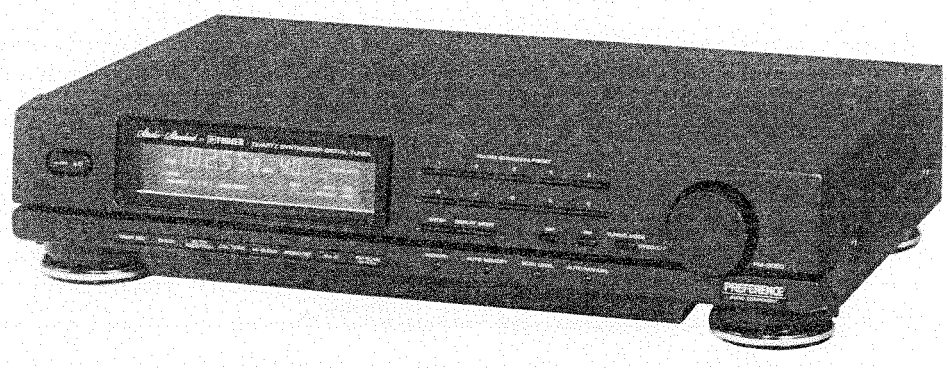
(EUROPE)

125 975 42

This service manual is prepared for Model FM-9060R. As only the components in the chart below differ, refer to the service manual FM-9060 (WM-570345) for other components. + 738

Ref.No.	FM-9060	FM-9060R	Description	Q'ty
	PACKAGE			
	620 203 9459	620 211 8567	Inner Carton	1
	ACCESSORIES			
	620 204 4330	620 211 8338	Assy,Poly Cover	1
	620 209 1631	620 211 8352	Label,Barcode	1
	CABINET			
2	620 203 9435	620 211 8543	Assy,Cabinet	1
6	620 203 6557	620 211 8536	Panel,Rear	1
Add	– – – –	620 211 8376	Assy,PCB,Fuse	1
Add	– – – –	620 017 1212	AC Socket	1

Add this sheet Model FM-9060 Service Manual (WM-570345).



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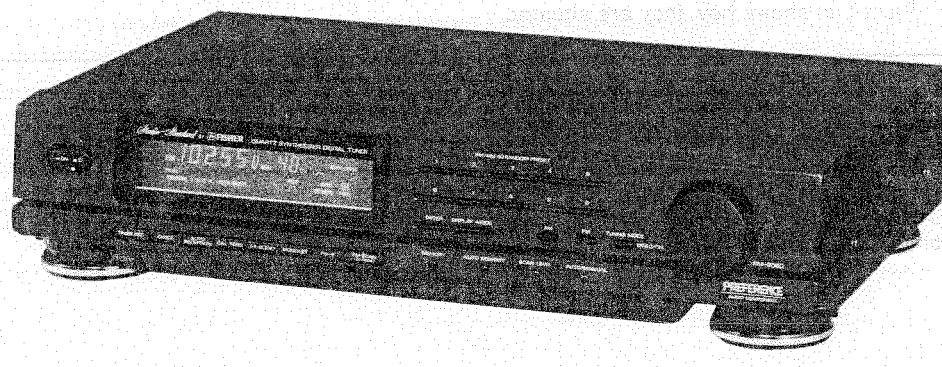

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SPECIFICATIONS

FM SECTION

Usable Sensitivity
- Monaural ..... 1.0 µV/14.73 dBf

46 dB Quieting Sensitivity
- Monaural ..... 3.5 µV/19.19 dBf
- Stereo ..... 60 µV/42.10 dBf

Signal-to-Noise Ratio
- Monaural ..... 70 dB
- Stereo ..... 70 dB

Capture Ratio ..... 1.5 dB
Alternate Channel Selectivity (±300 kHz) ..... WIDE 45 dB
NARROW 70 dB
Image Response Ratio ..... 100 dB
Spurious Response Ratio ..... 110 dB
IF Response Ratio ..... 110 dB
AM Suppression Ratio ..... 60 dB

Total Harmonic Distortion at 85 dBf (WIDE)
- Monaural (100 Hz/1 kHz/6 kHz) ..... 0.05/0.03/0.05 %
- Stereo (100 Hz/1 kHz/6 kHz) ..... 0.2/0.15/0.3 %

Stereo Separation (WIDE)
- (100 Hz/1 kHz/10 kHz) ..... 40/45/30 dB

Sub-Carrier Rejection (19 kHz/38 kHz) ..... 50/70 dB
Audio Frequency Response
- (20 Hz - 15 kHz) ..... ±3.0 dB

AM SECTION

Usable Sensitivity ..... 600 µV/m
Selectivity(±9kHz) ..... 40 dB
Signal-to-Noise Ratio ..... 55 dB
Image Response Ratio ..... 40 dB
IF Response Ratio ..... 60 dB

GENERAL

Power Requirements ..... AC 220V
(50Hz) ..... 20 Watts
Dimensions (W x H x D) ..... 440 x 90 x 270mm
Weight (approx.) ..... 3.9 kg

– Specifications and design are subject to change without notice. –

REFERENCE No. WM-570345

738

NOTES ON REPAIR AND ADJUSTMENT

1. The IC501 (Micon P.C.Board) of the FM-9060 uses two types of as follows.

IC501	Parts No.
TMP47C870N-4674Z	410 090 5708
TMP47C870N-4675Z	410 108 5904

2. When changing the IC501 from TMP47C870N-4674Z to TMP47C870Z-4675Z, change the R735 (TUNER P.C.Board) from 3.3k to 1k.

IC used in the IC501	Resistor for use in R735	
	Description	Parts No.
TMP47C870N-4674Z	CARBON 3.3K JA 1/6W	401 026 4308
TMP47C870N-4675Z	CARBON 1K JA 1/6W	401 024 7004

3. The FE P.C.Board of the FM-9060 uses the following two types of. Refer to the P.C.Board Parts List as there are different types of PCB parts. P.C.Board Parts List shows how they are situated.

Ref No.	Parts No.	Description
49	620 204 7485	ASSY,PCB,FM-FE,EU5,KV1320
49	620 208 1335	ASSY,PCB,FM-FE,EU5,SVC211

4. The FM CENTER VOLTAGE ALIGNMENT differs according to the types of in the IC501. Also, the FM RF FREQUENCY COVER ALIGNMENT differs according to the type of FM-FE P.C.Board. Refer to FM TUNER ALIGNMENT.

REQUIRED EQUIPMENT FOR TUNER ADJUSTMENT

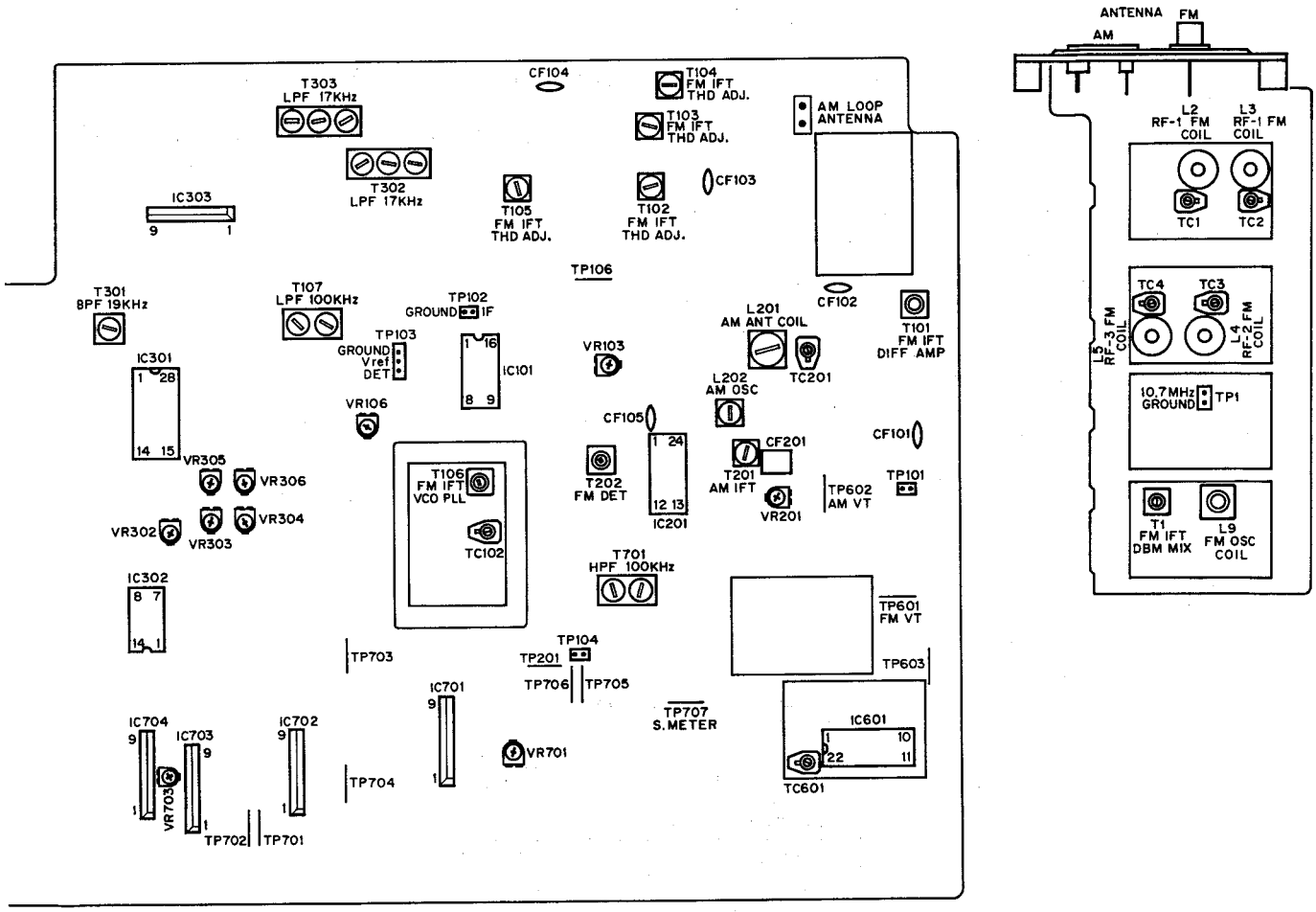
- FM-SSG : MEGURO MSG-290A or equivalent products more than 90dB S/N.
  : KIKUSUI KSG-4300 or equivalent products less than 0.005% THD.
- AM-SSG : MEGURO MSG-2554 or equivalent products.
- STEREO-SSG : MEGURO MSG-211G or equivalent products more than 60dB separation.
- HARMONIC DISTORTION ANALYZER : HEWLETT PACKARD 339A or equivalent products.
- 2CH AC MILLIBAR : KIKUSUI AVM25 or equivalent products.
- CENTER ZERO METER : KIKUSUI 115A or equivalent products.
- HIGH INPUT RESISTER DC VOLTMETER : KIKUSUI 165A or equivalent products.
- FM-AM IF GENESCOPE : MEGURO MSW-721D or equivalent products.
- FREQUENCY COUNTER : TAKEDARIKEN TR5822 or equivalent products.
- OSCILLOSCOPE : 2CH, 30MHz
- DIGITAL MULTI METER : TAKEDARIKEN TR-6843 or equivalent products.

CAUTION ON RF ADJUSTMENT

This model uses a microprocessor for memory preset control for the various bands.
This function has been used to preset frequency points for the different bands to permit adjustment and make it possible to check the function of the microprocessor. To use this supplemental function, press the TIMER REC button for approximately 3 seconds so that the frequency points show in the following table before beginning adjustment. The following table shows the initially preset frequencies.

Channel No.	1	2	3	4	11	12	13	14	15
FM-1	87.5MHz	108MHz	88MHz	98MHz	–	–	–	–	–
AM	–	–	–	–	522kHz	1629kHz	603kHz	999kHz	1404kHz

TUNER P.C.BOARD ADJUSTMENT POINT
(TOP VIEW)



AM TUNER ALIGNMENT

AM ALIGNMENT – Band Selector switch to AM position.
Maintain generator output as low as possible for suitable indication.

Note: Perform this alignment after FM Tuner Alignment.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. AM IF ALIGNMENT	Connect 450kHz Radio IF Genescope output to AM antenna terminal and ground. Adjust output level to 60dBμV/m.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP201 and ground lead to chassis.	Adjust AM IFT (T201) for maximum gain and best symmetry. Keep signal low enough for noise on response.
2. AM RF FREQUENCY COVER ALIGNMENT (522kHz)	Do not connect generator.	Press the Channel buttons "1" twice then press the ENTER Button to show 522kHz.	Connect DC Voltmeter to TP602 and ground lead to chassis.	Check DC Voltmeter for Indication 0.8V ~ 1.4V.
3. (1629kHz)	Same as above.	Press the Channel buttons "1" and "2" then press the ENTER button to show 1629kHz.	Same as above.	Check DC Voltmeter for Indication 7.0V ~ 9.0V.
Note: Repeat the adjustments in Items 2 and 3. Then, confirm that each voltage becomes 1.2V to 7.9V at receiving frequency of 522kHz to 1629kHz. **(See Table 1)**				
4. AM RF TRACKING ALIGNMENT (603kHz)	Connect Standard Loop Antenna to output terminal of AM RF Signal Generator. Place Loop Antenna 60cm away from Loop Antenna (Unit). Generator Setting to 603kHz or 1404kHz. Modulate with 400Hz (30 % modulation) and output level to 70dBμV/m.	Press the Channel buttons "1" and "3" then press the ENTER button to show 603kHz.	Connect DC Voltmeter and Oscilloscope to TP707 and ground lead to chassis.	Adjust AM Antenna Coil (L201) for maximum gain output.
5. (1404kHz)		Press the Channel buttons "1" and "5" then press the ENTER button to show 1404kHz.	Same as above.	Adjust AM Antenna Trimmer (TC201) for maximum gain output
Note: Repeat the adjustments in Items 4 and 5. Then, confirm there is no tracking error.				
6. AM AUTO STOP SENSITIVITY ADJUSTMENT	Change Generator setting to 999kHz and output level to 60dBμV/m.	Press the Channel buttons "1" and "4" then press the ENTER Button to show 999kHz.	Front Panel Signal Strength Indicator Display.	Adjust VR201 until the second digit of Signal Strength indicator flashes.

Use a screwdriver with plastic grip for all adjustments.

AM Frequency Cover Range
Tuning Voltage Value at TP602

(Table 1)

	522kHz	1629kHz
Minimum	0.8V	7.0V
Typical	1.2V	7.9V
Maximum	1.4V	9.0V

FM TUNER ALIGNMENT

FM ALIGNMENT – Band Selector switch to FM/ST(MUTE) position.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. REFERENCE PLL OSC ALIGNMENT	Do not connect generator.	Press the Channel buttons "4" then press the ENTER button to show 98MHz.	Connect Frequency Counter to TP603 and ground lead to chassis. Use 5pF capacitor in series with lead.	Adjust PLL OSC Trimmer (TC601) of IC601 LM7000 Side) until Frequency Counter reads 108.7MHz ±0.1kHz
2. FM IF ALIGNMENT	Connect 10.7MHz/40kHz deviation Radio IF Generator output to TP1 and ground lead to chassis.	Position of non-interference Minimum Frequency.	Connect DC Voltmeter to TP106 and ground lead to chassis.	Set FM-IF switch to WIDE. Then adjust FM IFT (T1) and FM IFT (T101,T102,T105) for maximum gain output.
				Set FM-IF switch to NARROW. Then adjust FM IFT (T103,T104) for maximum gain output.
3. FM CENTER VOLTAGE ALIGNMENT	Same as above.	Same as above	Connect Center Zero Meter across TP706(+) and TP705(−).	Adjust FM DET Coil (T202) until Center Zero Meter reads 0V ±5mV.
				If the unit uses TMP47C870N-4674Z in the IC501, it operates as follows. Adjust VR703 so that the TUNING indicator of the FL display lights up in the 10.7MHz ±45kHz range. Then adjust it to flash the left side arrow ▶ at 10.745MHz and the right side arrow ◀ at 10.655MHz.
				If the unit uses TMP47C870N-4675Z in the IC501, it operates as follows. Adjust VR703 so that the TUNING indicator of the FL display lights up in the 10.7MHz ±20kHz range. Then adjust it to flash the left side arrow ▶ at 10.722MHz and the right side arrow ◀ at 10.678MHz.
4. FM RF FREQUENCY COVER ALIGNMENT (108MHz)	Do not connect Generator.	Press the Channel buttons "2" then press the ENTER button to show 108MHz.	Connect DC Voltmeter to TP601 and ground lead to chassis.	If the unit uses ASSY,PCB,FM-FE, EU5,KV1320 it operates as follows. Adjust FM OSC Coil (L9) until DC Voltmeter reads 26.0V.
				If the unit uses ASSY,PCB,FM-FE, EU5,SVC211 it operates as follows. Adjust FM OSC Coil (L9) until DC Voltmeter reads 25.0V.
5. (87.5MHz)	Same as Above.	Press the Channel buttons "1" then press the ENTER button to show 87.5MHz.	Same as above.	If the unit uses ASSY,PCB,FM-FE, EU5,KV1320 it operates as follows. Check the DC Voltmeter reads more than 5.0V.
				If the unit uses ASSY,PCB,FM-FE, EU5,SVC211 it operates as follows. Check the DC Voltmeter reads 1.3V ~ 1.6V.
Note: Repeat the adjustments in Items 4 and 5. Then, confirm that each voltage becomes 5V to 26V (or 1.3V ~ 1.6V to 25V) at receiving frequency of 87.5MHz to 108MHz.				

Use a screwdriver with plastic grip for all adjustments.

FM TUNER ALIGNMENT

FM ALIGNMENT – Band Selector switch to FM/ST(MUTE) position.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
6. FM RF TRACKING ALIGNMENT (108MHz)	Connect FM RF Signal Generator through FM Dummy Antenna to FM Antenna terminals. Set Generator to 108MHz or 88MHz. Modulate with 1kHz to provide 40kHz deviation. Adjust output level to 30dBμV.	Press the Channel buttons "2" then press the ENTER button to show 108MHz.	Connect DC Voltmeter and Oscilloscope to TP106 and ground lead to chassis.	Set MODE switch to MONO and set FM-IF switch to WIDE. Then adjust FM RF Trimmer (TC1, TC2) and (TC3,TC4) for maximum gain output.
7. (88MHz)		Press the Channel buttons "3" then press the ENTER button to show 88MHz.	Same as above.	Adjust FM Antenna Coil (L2,L3) and FM RF Coil (L4,L5) for maximum gain output.
Note: Repeat the adjustments in Items 6 and 7. Then, confirm there is no tracking error.				
8. FM PLL DET. VCO CENTER ALIGNMENT	Connect 10.7MHz/1kHz MONO 40kHz deviation Ratio IF Generator output to TP102. Setting generator with attenuator output level for 100dBμV.	Position of non-interference Minimum Frequency.	Connect Harmonic Distotion Analyzer and Oscilloscope to TUNER OUT terminal and connect Center Meter to TP103 (Vref and DET terminal).	Set MODE switch to ST (MUTE). Adjust TC102 and check the detector output waveform. Set the center voltage to 0V±50mV. Then adjust VR106 and minimize the distortion.
9. DETECTOR ALIGNMENT (MINIMUM T.H.D.)	Under the above noted item2, set the signal of 80dBμV to FM antenna terminal.	Set FM-IF switch to WIDE.	Connect Harmonic Distortion to TUNER OUT terminal and connect DC voltmeter and oscilloscope to the TP106.	Then adjust T1 and minimize the distortion. Adjust T101 and minimize the distortion . Then adjust T102 and T105 and minimize the distortion. In this case, do not turn the core of T1 more than ±10° from the maximum point of output voltage of TP106 and do not turn T101 more than ±45°, and T102, T105 more than ±90°.
		Set FM-IF switch to NARROW.		Then adjust T104 until the waveform of TP106 becomes smooth Next, Adjust T103 and minimize the distortion. In this case, do not turn T104 more than ±180° and T103 more than ±90°.
Note: If the distortion level is not approved in the specifications, readjust the above items. As a reference, the distortion of the STEREO L/R must match in both the differential phase character and differential band character.				
10. FM STEREO SIGNAL SEPARATION CONTROL	Under the above noted item3, connect FM-STEREO-SSG and set the STEREO signal of MAIN at 53.3% and PILOT at 9%. The modulation is 1kHz, Dev 40kHz.		Connect the 2ch AC millibar to TUNER OUT Lch and Rch through 15kHz LPF.	Set the STEREO SSG to Rch. Adjust VR303 under WIDE of FM-IF switch and adjust VR305 under NARROW so that the separation of the Lch approves in the most appropriate range.
				Set the STEREO SSG to Lch. Adjust VR304 under the WIDE of FM-IF switch and adjust VR306 under the NARROW so that the separation of the Rch approves in the most appropriate range.
11. FM MUTING LEVEL ADJUSTMENT	Connect FM RF signal generator through FM Dummy Antenna to FM Antenna terminals. Adjust attenuator output level for 13dBμV.			Adjust VR103 so that muting is operated under 13dBμV (the output waveform disappears and the first digit of Signal Meter flashes.)

Use a screwdriver with plastic grip for all adjustments.

FM TUNER ALIGNMENT

FM ALIGNMENT – Band Selector switch to FM/ST(MUTE) position.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
12. CAL TONE LEVEL ADJUSTMENT	Connect FM Stereo SG to FM Antenna terminals. Set generator output level to 60dBμV at 98MHz stereo signal (1kHz, 37.5kHz deviation) /MONO Mode.	Press the Channel buttons "4" then press the ENTER button to show 98MHz.	Connect DC Volt-meter to TUNER OUT terminals.	Record the TUNER output voltage and set the CAL TONE switch to ON. Then adjust VR302 so that the same output is as the recorded one is.
13. FM NOISE GAIN ADJUSTMENT	Connect FM Stereo SG to FM Antenna terminals. Set generator output level to 30dBμV at 98MHz stereo signal (1kHz, 40kHz deviation) /MONO Mode.	Same as above. Set FM-IF switch to NARROW.	Short TP704 to the ground.	Then adjust VR701 so that TP701 output voltage reaches 1.2V ±0.2V.
	Set generator output level to 20dBμV.	Set FM-IF switch to WIDE.	Disconnect TP704 from the ground.	Check that the FM-IF switch sets to NARROW and HI-BLEND sets to ON when the FM SCAN switch is pressed.
	Set generator output level to 50dBμV.	Press the FM SCAN switch.		Check that FM-IF switch sets to WIDE and HI-BLEND sets to OFF.

Use a screwdriver with plastic grip for all adjustments.

CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	620 208 4879	Pad.	1
	620 208 5647	Reinforcement	2
	620 203 9459	Inner Carton	1
	620 204 9533	Pad,Top	1
	620 198 7232	Pad,Bottom	1
	620 057 8783	Bag Fan	1
	620 059 6596	Patching Sheet	1
	620 148 8012	Sheet Polyethylene	1
	620 152 7452	Serial No. Sheet	2
ACCESSORIES			
	620 204 4330	Assy,Poly Cover	1
	620 206 5403	Cord,Assy Auto Func.3P XH	1
or	620 020 8093	Connector 3P Assy	1
	620 204 4248	Instruction Manual	1
	620 037 3463	RCA Cord 700mm Black	1
	620 057 8783	Bag Fan	1
	620 062 0543	Serial No. Sheet	1
	620 112 8123	Holder Antenna	1
	620 152 2624	Certificate Card	1
CABINET			
	620 022 3454	Terminal Lug	1
	620 189 4431	Adhesive Sheet	2
	620 125 8424	Wire Band	5
	620 152 7452	Serial No. Sheet	1
	620 204 9182	Connector-S,4P TXG-P04XA1 (CN101)	1
	620 204 9205	Connector-S,7P TXG-P07XA1 (CN102)	1
1	⚠ 620 023 7550	Power Cord	1
2	620 203 9435	Assy,Cabinet	1
3	620 208 1236	Assy,Knob,Rotary	1
4	620 198 6969	Assy,Foot	4
5	620 203 6540	Cover,Top	1
6	620 203 6557	Panel,Rear	1
7	620 203 6502	Knob,Function	1
8	620 203 6489	Button,Power	1
9	620 203 6472	Button,Select	3
10	620 198 4880	Button,Tact	4
11	620 203 6458	Button,Preset	1
12	620 203 6564	Chassis	1
13	620 203 6441	Bracket-E,PCB-A	3
14	620 203 6533	Bracket-E,PCB	1
15	620 203 6526	Bracket-M	1
16	620 208 1212	Plate,Earth	1
or	620 050 2887	Cramp Wire	3
17	620 202 1829	Filter,Edge Light	1
18	620 203 6496	Filter,FL	1
19	620 199 8337	Loop Antenna,LA300B	1
20	⚠ 620 201 8584	Power Trans,SEV,20VA	1
21	620 052 4155	Cushion	1
22	620 053 2136	Bushing (MP4N-4)	1
23	620 122 2210	Holder Antenna	1
24	620 123 0284	SCR TPG BIN + M4.0X8	4
25	620 123 0840	+ BTS-C M4X10 Sems	2
41	620 204 7386	Assy,PCB,Micon	1
42	620 204 7393	Assy,PCB,Jog Daial	1
43	620 204 7409	Assy,PCB,Lamp	1
44	620 204 7416	Assy,PCB,Shield 1	1
45	620 204 7423	Assy,PCB,Shield 2	1
46	620 204 7430	Assy,PCB,Tuner	1
47	620 204 7447	Assy,PCB,VCO	1
48	620 204 7454	Assy,PCB,Power Switch	1
49	620 204 7485	Assy,PCB,FM-FE,EU5,KV1320	1
61	411 020 5300	SCR S-TPG BRZ 2.6X12	4
62	411 020 7700	SCR S-TPG BRZ 3X6	17
63	411 099 9704	SCR S-TPG BRZ 3X6	10
64	411 020 8004	SCR S-TPG BRZ 3X8	6
65	411 099 9803	SCR S-TPG BRZ 3X8	3
66	411 021 1202	SCR S-TPG BIN 2X8	29
67	411 021 6603	SCR S-TPG BIN 3X8	3

Ref. No.	Part No.	Description	Q'ty

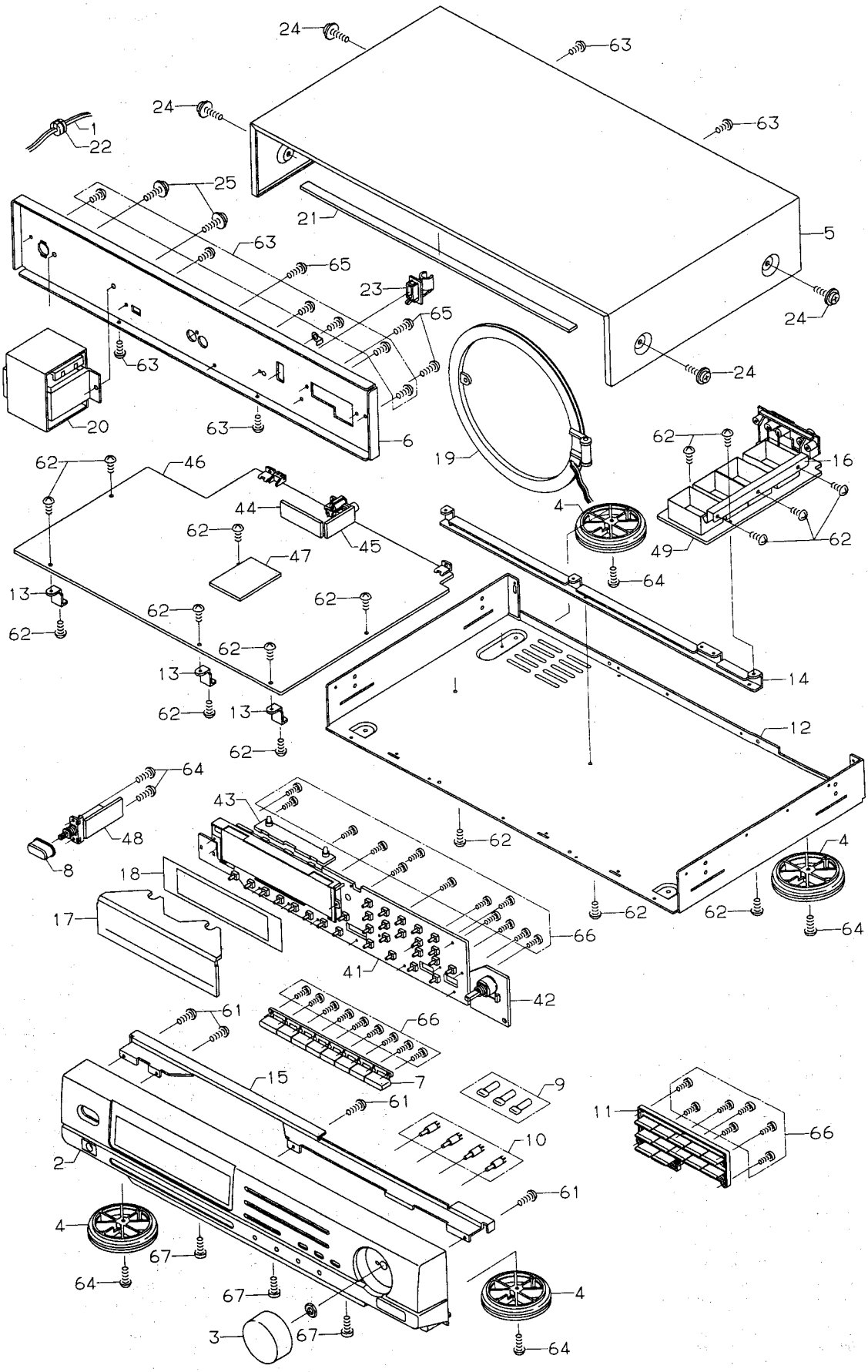
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CABINET & CHASSIS EXPLODED VIEW



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,MICON			
41	620 204 7386	Assy,PCB,Micon	1
	411 022 7807	SCR S-TPG PAN 2X6	2
	620 203 6519	Mount-E,FL	1
	620 204 8567	Fluorescent Tube,FIP-9BM9	1
CF501	620 202 2062	Resonator,Ceram,4.19MHz	1
CN501	620 196 2567	Connector-P,TKC-B10P-E1	1
CN502	620 196 2543	Connector-P,TKC-B06P-E1	1
CN503	620 196 2543	Connector-P,TKC-B06P-E1	1
CN504	620 196 4332	Connector-P,TKC-B08P-E1	1
C501	620 201 0632	Capacitor,0.022F/5.5V	1
RB501	620 004 5186	Resistor 9X10K J	1
RB502	620 182 6722	Resistor 10X100K	1
RB503	620 004 5575	Resistor 4X100K J	1
S500	620 202 2154	Switch,Tact (1)	1
S501	620 202 2154	Switch,Tact (2)	1
S502	620 202 2154	Switch,Tact (3)	1
S503	620 202 2154	Switch,Tact (4)	1
S510	620 202 2154	Switch,Tact (5)	1
S511	620 202 2154	Switch,Tact (6)	1
S512	620 202 2154	Switch,Tact (7)	1
S513	620 202 2154	Switch,Tact (8)	1
S520	620 202 2154	Switch,Tact (9)	1
S521	620 202 2154	Switch,Tact (0)	1
S523	620 202 2154	Switch,Tact (ENTER)	1
S530	620 202 2154	Switch,Tact (TM.P CHECX)	1
S531	620 202 2154	Switch,Tact (TM.P ON/OFF)	1
S532	620 202 2154	Switch,Tact (DISP MODE STATION NAME)	1
S533	620 202 2154	Switch,Tact (MEMORY)	1
S542	620 202 2154	Switch,Tact (AM)	1
S543	620 202 2154	Switch,Tact (FM)	1
S550	620 202 2154	Switch,Tact (SCAN LEVEL)	1
S551	620 202 2154	Switch,Tact (FM SCAN STEP 100K/25K)	1
S552	620 202 2154	Switch,Tact (SCAN MODE AUTO/NOR)	1
S553	620 202 2154	Switch,Tact (CH/FREO)	1
S561	620 202 2154	Switch,Tact (IF N/W)	1
S562	620 202 2154	Switch,Tact (HI-BLEND)	1
S563	620 202 2154	Switch,Tact (ST/MONO)	1
S571	620 202 2154	Switch,Tact (CAL.TONE)	1
S572	620 202 2154	Switch,Tact (AUTO RECEPTION)	1
S583	620 202 2154	Switch,Tact (AUTO MEMORY)	1
IC501	410 090 5708	IC TMP47C870N-4674Z	1
IC501	410 108 5904	IC TMP47C870N-4675Z	1
Q501	405 019 3903	TR 2SC536-G-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q502	405 004 5103	TR 2SA608-G-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q503	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q504	405 004 5103	TR 2SA608-G-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q505	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
D503	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D504	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D505	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D520	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D521	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D522	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D523	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D524	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D525	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D526	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D527	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D528	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D529	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D530	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D531	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D532	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D533	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D591	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
C502	403 043 1100	ELECT 220U M 16V	1
C503	403 121 9509	CERAMIC 0.1U Z 50V	1
C504	403 038 2709	ELECT 100U M 6.3V	1
C505	403 001 1906	CERAMIC 0.01U M 16V	1
C506	403 069 8404	CERAMIC 0.01U Z 50V	1
C507	403 069 8404	CERAMIC 0.01U Z 50V	1
C508	403 069 8404	CERAMIC 0.01U Z 50V	1
C509	403 069 8404	CERAMIC 0.01U Z 50V	1
C510	403 001 1906	CERAMIC 0.01U M 16V	1
C511	403 069 1207	CERAMIC 1000P K 50V	1
C512	403 069 1207	CERAMIC 1000P K 50V	1
C513	403 069 1207	CERAMIC 1000P K 50V	1
C514	403 001 1906	CERAMIC 0.01U M 16V	1
C515	403 001 1906	CERAMIC 0.01U M 16V	1
C525	403 121 9509	CERAMIC 0.1U Z 50V	1
R501	401 026 9600	CARBON 470 JA 1/6W	1
R502	401 026 3905	CARBON 330 JA 1/6W	1
R503	401 027 2303	CARBON 560 JA 1/6W	1
R504	401 024 7400	CARBON 10K JA 1/6W	1
R506	401 024 7707	CARBON 100K JA 1/6W	1
R507	401 024 7400	CARBON 10K JA 1/6W	1
R508	401 018 3807	CARBON 3.3K JA 1/4W	1
R509	401 018 3807	CARBON 3.3K JA 1/4W	1
R510	401 024 7707	CARBON 100K JA 1/6W	1
R511	401 024 7400	CARBON 10K JA 1/6W	1
R512	401 024 7707	CARBON 100K JA 1/6W	1
R513	401 025 8208	CARBON 22K JA 1/6W	1
R514	401 024 7707	CARBON 100K JA 1/6W	1
R515	401 024 7400	CARBON 10K JA 1/6W	1
R516	401 027 0309	CARBON 47K JA 1/6W	1
R517	401 025 8208	CARBON 22K JA 1/6W	1
R520	401 024 6700	CARBON 100 JA 1/6W	1
R521	401 027 0309	CARBON 47K JA 1/6W	1
R523	401 012 5708	CARBON 1K JA 1/4W	1
R524	401 012 5708	CARBON 1K JA 1/4W	1
R525	401 024 7707	CARBON 100K JA 1/6W	1
R526	401 024 7707	CARBON 100K JA 1/6W	1
R527	401 024 7004	CARBON 1K JA 1/6W	1
R530	401 018 3807	CARBON 3.3K JA 1/4W	1
R531	401 018 3807	CARBON 3.3K JA 1/4W	1
R532	401 018 3807	CARBON 3.3K JA 1/4W	1
R533	401 018 3807	CARBON 3.3K JA 1/4W	1
R534	401 018 3807	CARBON 3.3K JA 1/4W	1
ASSY,PCB,JOG DAIAL			
42	620 204 7393	Assy,PCB,Jog Daial	1
S590	620 204 8581	Switch,Rotary-Encoder	1
IC502	409 051 5000	IC TC4093BP	1
or	409 068 9602	IC HD14093B	1
Q506	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q507	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q508	405 084 7004	TR DTC144-EL-TP	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
or	405 018 2501	TR 2SC3399-AC	1
D507	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D508	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D515	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D516	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D517	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D518	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
C516	403 038 2709	ELECT 100U M 6.3V	1
C517	403 068 9402	CERAMIC 100P K 50V	1
C518	403 068 9402	CERAMIC 100P K 50V	1
C519	403 067 7706	MT-COMPO 0.047U J 50V	1
C520	403 067 7706	MT-COMPO 0.047U J 50V	1
C522	403 001 1906	CERAMIC 0.01U M 16V	1
C523	403 001 1906	CERAMIC 0.01U M 16V	1
C524	403 067 7706	MT-COMPO 0.047U J 50V	1
R537	401 012 4503	CARBON 100 JA 1/4W	1
R538	401 025 8208	CARBON 22K JA 1/6W	1
R539	401 025 8208	CARBON 22K JA 1/6W	1
R540	401 025 8208	CARBON 22K JA 1/6W	1
R541	401 026 4902	CARBON 330K JA 1/6W	1
R542	401 026 4902	CARBON 330K JA 1/6W	1
R543	401 026 4902	CARBON 330K JA 1/6W	1
R544	401 026 4902	CARBON 330K JA 1/6W	1
R545	401 026 4902	CARBON 330K JA 1/6W	1
R546	401 025 8208	CARBON 22K JA 1/6W	1
ASSY,PCB,LAMP			
43	620 204 7409	Assy,PCB,Lamp	1
	620 030 8083	Lamp	2
	620 198 0875	Spacer	2
ASSY,PCB,SHIELD 1			
44	620 204 7416	Assy,PCB,Shield 1	1
	620 204 6006	PCB,Shield 1	1
ASSY,PCB,SHIELD 2			
45	620 204 7423	Assy,PCB,Shield 2	1
	620 204 6013	PCB,Shield 2	1
ASSY,PCB,TUNER			
46	620 204 7430	Assy,PCB,Tuner	1
	411 020 8004	SCR S-TPG BRZ 3X8	5
	620 197 6427	Shield,TU-2	3
	620 204 9137	Jack,RCA,2P-H W/R W/GND-C	1
	620 202 3434	Fuse Holder,Taping	4
	620 050 2450	Metal Mount Antenna	2
	620 053 8084	Plate Heat Sink	1
	620 053 9012	Plate Heat Sink	1
	620 053 9241	Plate Heat Sink	1
	620 186 7275	Plate Earth	6
	620 189 1294	Plate Heat Sink	1
	620 191 6355	Jumper	1
CF101	620 014 5794	Ceramic Filter	1
CF102	620 204 9083	Filter,Ceram,SFE10.7MX2HA	1
CF103	620 014 5664	Ceramic Filter	1
CF104	620 204 9090	Filter,Ceram,SFE10.7MZ2HA	1
CF105	620 014 5633	Ceramic Filter	1
CF201	620 196 6848	Filter Ceramic,SFP450H	1
CF301	620 014 6319	Ceramic OSC CSB456F11	1
CF601	620 007 1338	Crystal 7.2MHz	1
or	620 007 1314	Crystal 7.2MHz	1
or	620 007 3226	Crystal 7.2MHz	1
CN101	620 204 9175	Connector-P,4P TXG-P04PA1	1
CN102	620 204 9199	Connector-P,7P,TXG-P07PA1	1
CN103	620 204 9151	Connector-P,3P#3022-03B	1
CN104	620 204 9151	Connector-P,3P#3022-03B	1
CN105	620 204 9151	Connector-P,3P#3022-03B	1

Ref. No.	Part No.	Description	Q'ty
CN401	620 200 2583	Socket,Holder,6P	1
CN501	620 196 2574	Connector-S,TKC-B10X-E1	1
CN502	620 196 2550	Connector-S,TKC-B06X-E1	1
CN503	620 196 2550	Connector-S,TKC-B06X-E1	1
CN504	620 196 4349	Connector-S,TKC-B08X-E1	1
CN505	620 021 6524	Plug 3P	1
F401 ⚠	423 004 3301	FUSE 250V T0.8A	1
F402 ⚠	423 004 3301	FUSE 250V T0.8A	1
L101	620 202 0112	Inductor 2.2UH K	1
L102	620 202 0112	Inductor 2.2UH K	1
L103	620 197 9251	Inductor 2.2UH M	1
L104	620 197 9565	Inductor 220UH K	1
L105	620 202 4851	Inductor 1MH K	1
L106	620 197 9565	Inductor 220UH K	1
L107	620 197 9565	Inductor 220UH K	1
L108	620 202 0112	Inductor 2.2UH K	1
L110	620 197 9251	Inductor 2.2UH M	1
L201	620 204 9236	Coil,Ferrite,205UH,ANT MW	1
L202	620 196 6725	Trans,OSC AM	1
L301	620 196 6510	Inductor,Ferrite,15MH,J	1
L701	620 197 9565	Inductor 220UH K	1
RB504	620 004 5209	Resistor 4X10K J	1
RB601	620 004 5575	Resistor 4X100K J	1
TC201	620 189 9108	Trimmer 20PF	1
TC601	620 189 9108	Trimmer 20PF	1
TP102	620 204 9168	Connector-P,2P#3022-02A	1
TP103	620 204 9151	Connector-P,3P#3022-03B	1
TW101	620 207 5952	Terminal,Wrapper,1P,I-501	1
TW201	620 204 9212	Terminal,Wrapper,2P I-502	1
TW401	620 204 9229	Terminal,Wrapper,5P,I-505	1
TW402	620 202 4196	Terminal,Wrapper,3P	1
TW403	620 022 2587	EC Terminal 1P	1
TW404	620 022 2587	EC Terminal 1P	1
T101	620 204 9045	Trans,IF,10.7MHz Diff Amplifier	1
T102	620 204 9076	Trans,IF,10.7MHz ADJ THD	1
T103	620 204 9069	Trans,IF,10.7MHz ADJ THD	1
T104	620 204 9069	Trans,IF,10.7MHz ADJ THD	1
T105	620 204 9076	Trans,IF,10.7MHz ADJ THD	1
T107	620 204 8635	Filter,LC,LPF,100kHz	1
T201	620 196 6695	Trans,IF,AM	1
T202	620 196 6619	Trans,IF,FM (DET)	1
T301	620 204 8666	Filter,LC,BPF,19kHz	1
T302	620 204 8659	Filter,LC,LPF,17kHz	1
T303	620 204 8659	Filter,LC,LPF,17kHz	1
T701	620 204 8642	Filter,LC,HPF,100kHz	1
VR103	620 204 9120	Potentiometer,4.7KB,TP	1
or	620 006 1391	Potentiometer 4.7KB	1
VR106	620 204 9113	Potentiometer,1KB,TP,Meta	1
or	620 006 2190	Potentiometer 1KB	1
VR201	620 202 2079	Potentiometer,10KB,TP	1
or	620 006 1377	Potentiometer 10KB	1
VR302	620 202 2093	Potentiometer,220KB,TP	1
or	620 006 1384	Potentiometer 220KB	1
VR303	620 204 9106	Potentiometer,1MB,TP	1
or	620 196 9870	Potentiometer 1MB	1
VR304	620 204 9106	Potentiometer,1MB,TP	1
or	620 196 9870	Potentiometer 1MB	1
VR305	620 204 9106	Potentiometer,1MB,TP	1
or	620 196 9870	Potentiometer 1MB	1
VR306	620 204 9106	Potentiometer,1MB,TP	1
or	620 196 9870	Potentiometer 1MB	1
VR701	620 202 2093	Potentiometer,220KB,TP	1
or	620 006 1384	Potentiometer 220KB	1
VR703	620 202 2079	Potentiometer,10KB,TP	1
or	620 006 1377	Potentiometer 10KB	1
IC101	409 016 1405	IC LA1235	1
IC201	409 073 9505	IC LA1266	1
IC301	409 080 9901	IC LA3450	1
IC302	409 051 3501	IC TC4066BP	1
or	409 030 5908	IC MC14066BCP	1
IC303	409 070 4909	IC NJM2068S-D	1
or	409 018 5401	IC LA6462S	1
IC401	409 140 0404	IC NJM79M12FA	1
IC402	409 074 0808	IC LA5667	1
IC601	409 025 7306	IC LM7000	1
IC701	409 079 0803	IC LA1060	1
IC702	409 068 4409	IC BA715	1
or	409 018 4909	IC LA6458S	1
IC703	409 068 4409	IC BA715	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
or	409 018 4909	IC LA6458S	1
IC704	409 068 4409	IC BA715	1
or	409 018 4909	IC LA6458S	1
Q102	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q103	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q104	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q105	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q106	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q107	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q108	405 026 9608	TR 2SK241-GR-TPE4	1
Q109	405 026 9608	TR 2SK241-GR-TPE4	1
Q110	405 026 9806	TR 2SK241-Y-TPE4	1
or	405 026 9608	TR 2SK241-GR-TPE4	1
Q111	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q112	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q113	405 016 1100	TR 2SC2839-F-SPA-AC	1
or	405 016 0905	TR 2SC2839-E-SPA-AC	1
Q119	405 027 0604	TR 2SK246-Y-TPE2	1
Q120	405 099 8102	TR 2SJ103-Y-TA	1
Q121	405 030 7904	TR 2SC1740SLN-E-T	1
or	405 030 8109	TR 2SC1740SLN-TP-S	1
Q122	405 030 7904	TR 2SC1740SLN-E-T	1
or	405 030 8109	TR 2SC1740SLN-TP-S	1
Q126	405 017 9600	TR 2SC3330-T-AC	1
or	405 017 9501	TR 2SC3330-S-AC	1
Q127	405 004 5103	TR 2SA608-G-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
or	405 008 7103	TR 2SB808-G-SPA-AC	1
or	405 008 6809	TR 2SB808-F-SPA-AC	1
or	405 006 1905	TR 2SA933S-TP-S	1
Q202	405 084 7202	TR DTA144-EL-TP	1
or	405 003 7603	TR 2SA1345-AC	1
Q203	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q204	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q205	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q302	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q303	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q304	405 039 5802	TR 2SC3792-AA	1
or	405 016 2206	TR 2SC2878-A	1
or	405 016 2305	TR 2SC2878-B	1
Q305	405 039 5802	TR 2SC3792-AA	1
or	405 016 2206	TR 2SC2878-A	1
or	405 016 2305	TR 2SC2878-B	1
Q306	405 038 3809	TR 2SK669	1
or	405 027 8402	TR 2SK583	1
Q307	405 021 0808	TR 2SD1012-H	1
or	405 021 0501	TR 2SD1012-G	1
Q308	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q309	405 038 3809	TR 2SK669	1
or	405 027 8402	TR 2SK583	1
Q310	405 038 3809	TR 2SK669	1
or	405 027 8402	TR 2SK583	1
Q401	405 034 5104	TR 2SK246-BL	1
or	405 073 6506	TR 2SK772-F	1
Q402	405 022 8209	TR 2SD1682-T	1
or	405 022 8001	TR 2SD1682-S	1
Q403	405 007 0204	TR 2SB1142-T	1
or	405 007 0006	TR 2SB1142-S	1
Q404	405 034 5104	TR 2SK246-BL	1
or	405 073 6506	TR 2SK772-F	1
Q405	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q406	405 008 7103	TR 2SB808-G-SPA-AC	1
or	405 008 6809	TR 2SB808-F-SPA-AC	1
Q407	405 084 7004	TR DTC144-EL-TP	1

Ref. No.	Part No.	Description	Q'ty
or	405 018 2501	TR 2SC3399-AC	1
Q408	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q409	405 004 5103	TR 2SA608-G-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
or	405 008 7103	TR 2SB808-G-SPA-AC	1
or	405 008 6809	TR 2SB808-F-SPA-AC	1
or	405 006 1905	TR 2SA933S-TP-S	1
Q410	405 022 8209	TR 2SD1682-T	1
or	405 022 8001	TR 2SD1682-S	1
Q413	405 034 5104	TR 2SK246-BL	1
or	405 073 6506	TR 2SK772-F	1
Q601	405 038 3809	TR 2SK669	1
or	405 027 8402	TR 2SK583	1
Q602	405 027 0505	TR 2SK246-GR (TPE2)	1
or	405 073 6407	TR 2SK772-E	1
Q603	405 030 7904	TR 2SC1740SLN-E-T	1
or	405 030 8109	TR 2SC1740SLN-TP-S	1
Q604	405 031 6906	TR 2SA970-BL	1
or	405 031 7002	TR 2SA970-GR	1
or	405 006 1905	TR 2SA933S-TP-S	1
or	405 031 6708	TR 2SA933-SR	1
Q605	405 038 3809	TR 2SK669	1
or	405 027 8402	TR 2SK583	1
Q607	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q608	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q701	405 017 9600	TR 2SC3330-T-AC	1
or	405 017 9501	TR 2SC3330-S-AC	1
Q703	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
Q704	405 084 7004	TR DTC144-EL-TP	1
or	405 018 2501	TR 2SC3399-AC	1
D102	407 070 1409	ZENER DIODE GZS12Z-BT	1
or	407 053 3307	ZENER DIODE MTZ12C	1
D105	407 012 4604	DIODE 1SS135-TA	1
D106	407 012 4604	DIODE 1SS135-TA	1
D107	407 012 4604	DIODE 1SS135-TA	1
D108	407 012 4604	DIODE 1SS135-TA	1
D109	407 012 4604	DIODE 1SS135-TA	1
D114	407 012 4604	DIODE 1SS135-TA	1
D115	407 126 9908	DIODE DA216	1
D120	407 099 5402	ZENER DIODE MTZJ6.2B-T-77	1
or	407 051 7208	ZENER DIODE GZS6.2Y-BT	1
or	407 099 5501	ZENER DIODE MTZJ6.2C-T-77	1
or	407 051 7307	ZENER DIODE GZS6.2Z-BT	1
D123	407 077 3109	DIODE SB0015-03A	1
D124	407 077 3109	DIODE SB0015-03A	1
D125	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D126	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D201-1	407 000 1509	VARACTOR DI KV1235Z	1
or	407 000 5507	VARACTOR DI SVC321SP-C-3	1
or	407 000 5606	VARACTOR DI SVC321SP-D-3	1
D201-2	407 000 1509	VARACTOR DI KV1235Z	1
or	407 000 5507	VARACTOR DI SVC321SP-C-3	1
or	407 000 5606	VARACTOR DI SVC321SP-D-3	1
D201-3	407 000 1509	VARACTOR DI KV1235Z	1
or	407 000 5507	VARACTOR DI SVC321SP-C-3	1
or	407 000 5606	VARACTOR DI SVC321SP-D-3	1
D202	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D203	407 099 6201	ZENER DIODE MTZJ10C-T-77	1
or	407 099 6102	ZENER DIODE MTZJ10B-T-77	1
D204	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D205	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D301	407 070 1409	ZENER DIODE GZS12Z-BT	1
or	407 053 3307	ZENER DIODE MTZ12C	1
D302	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D303	407 125 8209	DIODE HSS271	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D304	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D305	407 050 5502	ZENER DIODE GZA5.6Y-BT	1
or	407 050 5601	ZENER DIODE GZA5.6Z-BT	1
D401	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D402	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D403	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D404	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D405	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D406	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D407	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D408	407 061 4808	DIODE ERA15-01	1
or	407 004 9709	DIODE DSK10C-BT	1
D409	407 099 5402	ZENER DIODE MTZJ6.2B-T-77	1
or	407 051 7208	ZENER DIODE GZS6.2Y-BT	1
or	407 099 5501	ZENER DIODE MTZJ6.2C-T-77	1
or	407 051 7307	ZENER DIODE GZS6.2Z-BT	1
D410	407 070 4608	ZENER DIODE GZS30Y-BT	1
or	407 078 0701	ZENER DIODE MTZ30A-T-77	1
D411	407 063 8606	ZENER DIODE MTZJ5.1A	1
or	407 063 8507	ZENER DIODE MTZJ4.7C-T-77	1
or	407 051 6706	ZENER DIODE GZS5.1Y-BT	1
D412	407 070 4608	ZENER DIODE GZS30Y-BT	1
or	407 078 0701	ZENER DIODE MTZ30A-T-77	1
D413	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D601	407 063 8606	ZENER DIODE MTZJ5.1A	1
or	407 063 8507	ZENER DIODE MTZJ4.7C-T-77	1
or	407 051 6706	ZENER DIODE GZS5.1Y-BT	1
D602	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D603	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D604	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D605	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D606	407 061 0800	DIODE 1S2473T	1
or	407 005 3805	DIODE DS442-BT	1
D607	407 126 9908	DIODE DA216	1
D609	407 063 8606	ZENER DIODE MTZJ5.1A	1
or	407 051 6706	ZENER DIODE GZS5.1Y-BT	1
D701	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D702	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D703	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D704	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D705	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D706	407 063 8606	ZENER DIODE MTZJ5.1A	1
or	407 063 8507	ZENER DIODE MTZJ4.7C-T-77	1
or	407 051 6706	ZENER DIODE GZS5.1Y-BT	1
D707	407 063 8606	ZENER DIODE MTZJ5.1A	1
or	407 063 8507	ZENER DIODE MTZJ4.7C-T-77	1
or	407 051 6706	ZENER DIODE GZS5.1Y-BT	1
D710	407 099 5402	ZENER DIODE MTZJ6.2B-T-77	1
or	407 051 7208	ZENER DIODE GZS6.2Y-BT	1
or	407 099 5501	ZENER DIODE MTZJ6.2C-T-77	1
or	407 051 7307	ZENER DIODE GZS6.2Z-BT	1
D711	407 063 8606	ZENER DIODE MTZJ5.1A	1
or	407 063 8507	ZENER DIODE MTZJ4.7C-T-77	1

Ref. No.	Part No.	Description	Q'ty
or	407 051 6706	ZENER DIODE GZS5.1Y-BT	1
D712	407 099 6201	ZENER DIODE MTZJ10C-T-77	1
or	407 099 6102	ZENER DIODE MTZJ10B-T-77	1
C103	403 068 9402	CERAMIC 100P K 50V	1
C104	403 121 9509	CERAMIC 0.1U Z 50V	1
C105	403 043 1100	ELECT 220U M 16V	1
C106	403 001 1906	CERAMIC 0.01U M 16V	1
C107	403 001 1906	CERAMIC 0.01U M 16V	1
C109	403 121 9509	CERAMIC 0.1U Z 50V	1
C110	403 068 9402	CERAMIC 100P K 50V	1
C111	403 043 1100	ELECT 220U M 16V	1
C112	403 001 1906	CERAMIC 0.01U M 16V	1
or	403 069 8404	CERAMIC 0.01U Z 50V	1
C113	403 001 1906	CERAMIC 0.01U M 16V	1
C114	403 001 1906	CERAMIC 0.01U M 16V	1
C115	403 069 8404	CERAMIC 0.01U Z 50V	1
C116	403 121 9509	CERAMIC 0.1U Z 50V	1
C117	403 069 1207	CERAMIC 1000P K 50V	1
C118	403 069 1207	CERAMIC 1000P K 50V	1
C119	403 069 8404	CERAMIC 0.01U Z 50V	1
C120	403 043 1100	ELECT 220U M 16V	1
C121	403 044 0300	ELECT 47U M 16V	1
C122	403 121 9509	CERAMIC 0.1U Z 50V	1
C124	403 009 1809	CERAMIC 10P J 50V	1
C125	403 026 2209	CERAMIC 47P J 50V	1
C126	403 044 0300	ELECT 47U M 16V	1
C127	403 001 1906	CERAMIC 0.01U M 16V	1
C128	403 121 9509	CERAMIC 0.1U Z 50V	1
C129	403 001 1906	CERAMIC 0.01U M 16V	1
C130	403 121 9509	CERAMIC 0.1U Z 50V	1
C131	403 001 1906	CERAMIC 0.01U M 16V	1
C132	403 043 1100	ELECT 220U M 16V	1
C133	403 001 1906	CERAMIC 0.01U M 16V	1
C134	403 001 1906	CERAMIC 0.01U M 16V	1
C135	403 068 9402	CERAMIC 100P K 50V	1
C136	403 074 2701	CERAMIC 0.047U Z 50V	1
or	403 143 2809	CERAMIC 0.047U Z 50V	1
C137	403 074 2701	CERAMIC 0.047U Z 50V	1
or	403 143 2809	CERAMIC 0.047U Z 50V	1
C138	403 074 2701	CERAMIC 0.047U Z 50V	1
or	403 143 2809	CERAMIC 0.047U Z 50V	1
C139	403 026 2209	CERAMIC 47P J 50V	1
C140	403 088 7907	STYRENE 820P J 50V	1
C141	403 040 6702	ELECT 2200U M 10V	1
C142	403 121 9509	CERAMIC 0.1U Z 50V	1
C143	403 001 1906	CERAMIC 0.01U M 16V	1
C144	403 121 9509	CERAMIC 0.1U Z 50V	1
C146	403 121 9509	CERAMIC 0.1U Z 50V	1
C147	403 043 1100	ELECT 220U M 16V	1
C149	403 001 1906	CERAMIC 0.01U M 16V	1
C151	403 042 6205	ELECT 1000U M 16V	1
C153	403 073 7004	CERAMIC 470P K 50V	1
C155	403 042 6205	ELECT 1000U M 16V	1
C156	403 043 3104	ELECT 2200U M 16V	1
C157	403 043 3104	ELECT 2200U M 16V	1
C169	403 009 1809	CERAMIC 10P J 50V	1
C170	403 001 1906	CERAMIC 0.01U M 16V	1
C171	403 001 1906	CERAMIC 0.01U M 16V	1
C172	403 001 1906	CERAMIC 0.01U M 16V	1
C173	403 001 1906	CERAMIC 0.01U M 16V	1
C174	403 044 0300	ELECT 47U M 16V	1
C175	403 001 1906	CERAMIC 0.01U M 16V	1
C176	403 001 1906	CERAMIC 0.01U M 16V	1
C177	403 001 1906	CERAMIC 0.01U M 16V	1
C178	403 044 0300	ELECT 47U M 16V	1
C179	403 121 9509	CERAMIC 0.1U Z 50V	1
C180	403 069 8404	CERAMIC 0.01U Z 50V	1
C181	403 043 1100	ELECT 220U M 16V	1
C185	403 069 8404	CERAMIC 0.01U Z 50V	1
C186	403 121 9509	CERAMIC 0.1U Z 50V	1
C188	403 043 1100	ELECT 220U M 16V	1
C191	403 043 3104	ELECT 2200U M 16V	1
C194	403 038 7209	ELECT 220U M 6.3V	1
C201	403 001 1906	CERAMIC 0.01U M 16V	1
C202	403 038 7209	ELECT 220U M 6.3V	1
C204	403 025 7304	CERAMIC 4.7P K 50V	1
C205	403 024 1501	CERAMIC 39P J 50V	1
C207	403 088 7600	STYRENE 820P G 50V	1
C208	403 070 4105	CERAMIC 120P K 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C209	403 009 1809	CERAMIC	10P	J	50V	1
C210	403 070 4105	CERAMIC	120P	K	50V	1
C211	403 051 2106	ELECT	4.7U	M	50V	1
C212	403 051 2106	ELECT	4.7U	M	50V	1
C213	403 050 7805	ELECT	3.3U	M	50V	1
C214	403 001 1906	CERAMIC	0.01U	M	16V	1
C215	403 049 1708	ELECT	1U	M	50V	1
C216	403 057 0908	POLYESTER	0.01U	K	50V	1
C217	403 074 2701	CERAMIC	0.047U	Z	50V	1
or	403 143 2809	CERAMIC	0.047U	Z	50V	1
C218	403 074 2701	CERAMIC	0.047U	Z	50V	1
or	403 143 2809	CERAMIC	0.047U	Z	50V	1
C219	403 001 1906	CERAMIC	0.01U	M	16V	1
C220	403 044 0300	ELECT	47U	M	16V	1
C221	403 051 2106	ELECT	4.7U	M	50V	1
C222	403 001 1906	CERAMIC	0.01U	M	16V	1
C223	403 026 2209	CERAMIC	47P	J	50V	1
C224	403 049 5508	ELECT	10U	M	50V	1
C225	403 069 8404	CERAMIC	0.01U	Z	50V	1
C226	403 009 1809	CERAMIC	10P	J	50V	1
C227	403 121 9509	CERAMIC	0.1U	Z	50V	1
C235	403 121 9509	CERAMIC	0.1U	Z	50V	1
C301	403 043 1100	ELECT	220U	M	16V	1
C302	403 043 1100	ELECT	220U	M	16V	1
or	403 041 5704	ELECT	470U	M	10V	1
C303	403 068 9402	CERAMIC	100P	K	50V	1
C304	403 069 1207	CERAMIC	1000P	K	50V	1
C305	403 062 0900	POLYESTER	0.047U	K	50V	1
C308	403 069 1207	CERAMIC	1000P	K	50V	1
or	403 056 8608	POLYESTER	1000P	K	50V	1
C309	403 048 7701	ELECT	0.47U	M	50V	1
C310	403 049 1708	ELECT	1U	M	50V	1
C311	403 051 2106	ELECT	4.7U	M	50V	1
C312	403 049 1708	ELECT	1U	M	50V	1
C313	403 057 0908	POLYESTER	0.01U	K	50V	1
C314	403 061 7801	POLYESTER	4700P	J	50V	1
or	403 001 7601	CERAMIC	4700P	M	16V	1
C315	403 048 7701	ELECT	0.47U	M	50V	1
C316	403 048 7701	ELECT	0.47U	M	50V	1
C317	403 058 0808	POLYESTER	1500P	J	50V	1
C318	403 058 0808	POLYESTER	1500P	J	50V	1
C319	403 051 2106	ELECT	4.7U	M	50V	1
C320	403 051 2106	ELECT	4.7U	M	50V	1
C321	403 071 6207	CERAMIC	220P	K	50V	1
C322	403 071 6207	CERAMIC	220P	K	50V	1
C323	403 070 7809	CERAMIC	150P	K	50V	1
C324	403 070 7809	CERAMIC	150P	K	50V	1
C325	403 044 0300	ELECT	47U	M	16V	1
C326	403 049 5508	ELECT	10U	M	50V	1
C329	403 050 7805	ELECT	3.3U	M	50V	1
C330	403 050 7805	ELECT	3.3U	M	50V	1
C331	403 071 6207	CERAMIC	220P	K	50V	1
C332	403 071 6207	CERAMIC	220P	K	50V	1
C333	403 060 6607	POLYESTER	3300P	K	50V	1
C334	403 060 6607	POLYESTER	3300P	K	50V	1
C335	403 085 7009	NP-ELECT	47U	M	16V	1
or	403 085 3407	NP-ELECT	47U	M	10V	1
or	403 139 0505	NP-ELECT	100U	M	6.3V	1
C336	403 072 8200	CERAMIC	330P	K	50V	1
C337	403 001 1906	CERAMIC	0.01U	M	16V	1
C338	403 001 1906	CERAMIC	0.01U	M	16V	1
C339	403 060 2807	POLYESTER	0.027U	K	50V	1
C340	403 001 1906	CERAMIC	0.01U	M	16V	1
C341	403 043 1100	ELECT	220U	M	16V	1
C342	403 001 1906	CERAMIC	0.01U	M	16V	1
C343	403 043 1100	ELECT	220U	M	16V	1
C345	403 069 8404	CERAMIC	0.01U	Z	50V	1
or	403 001 1906	CERAMIC	0.01U	M	16V	1
C347	403 069 8404	CERAMIC	0.01U	Z	50V	1
or	403 001 1906	CERAMIC	0.01U	M	16V	1
C350	403 057 0908	POLYESTER	0.01U	K	50V	1
or	403 001 1906	CERAMIC	0.01U	M	16V	1
C356	403 069 8404	CERAMIC	0.01U	Z	50V	1
C361	403 069 8404	CERAMIC	0.01U	Z	50V	1
C362	403 069 8404	CERAMIC	0.01U	Z	50V	1
C409	403 047 6309	ELECT	470U	M	25V	1
C410	403 047 6309	ELECT	470U	M	25V	1
C411	403 051 5107	ELECT	470U	M	50V	1
C412	403 051 5107	ELECT	470U	M	50V	1

Ref. No.	Part No.	Description				Q'ty
C413	403 053 6706	ELECT	33U	M	35V	1
C415	403 069 8404	CERAMIC	0.01U	Z	50V	1
C416	403 069 8404	CERAMIC	0.01U	Z	50V	1
C417	403 069 8404	CERAMIC	0.01U	Z	50V	1
C418	403 069 8404	CERAMIC	0.01U	Z	50V	1
C419	403 069 8404	CERAMIC	0.01U	Z	50V	1
C420	403 046 0605	ELECT	2200U	M	25V	1
C421	403 045 2907	ELECT	1000U	M	25V	1
C422	403 049 5508	ELECT	10U	M	50V	1
C423	403 044 0300	ELECT	47U	M	16V	1
C424	403 053 6706	ELECT	33U	M	35V	1
C425	403 053 6706	ELECT	33U	M	35V	1
C427	403 049 5508	ELECT	10U	M	50V	1
C428	403 053 6706	ELECT	33U	M	35V	1
C430	403 044 0300	ELECT	47U	M	16V	1
C431	403 044 0300	ELECT	47U	M	16V	1
C432	403 044 0300	ELECT	47U	M	16V	1
C433	403 044 0300	ELECT	47U	M	16V	1
C435	403 047 9706	ELECT	0.1U	M	50V	1
C441	403 001 1906	CERAMIC	0.01U	M	16V	1
C444	403 038 7209	ELECT	220U	M	6.3V	1
C445	403 121 9509	CERAMIC	0.1U	Z	50V	1
C446	403 121 9509	CERAMIC	0.1U	Z	50V	1
C447	403 069 8404	CERAMIC	0.01U	Z	50V	1
C451	403 069 8404	CERAMIC	0.01U	Z	50V	1
C524	403 069 8404	CERAMIC	0.01U	Z	50V	1
C525	403 068 9402	CERAMIC	100P	K	50V	1
C601	403 017 0108	CERAMIC	20P	J	50V	1
C602	403 022 7703	CERAMIC	33P	J	50V	1
C603	403 038 7209	ELECT	220U	M	6.3V	1
C604	403 001 1906	CERAMIC	0.01U	M	16V	1
C605	403 068 9402	CERAMIC	100P	K	50V	1
C606	403 069 1504	CERAMIC	1000P	K	50V	1
C607	403 069 1504	CERAMIC	1000P	K	50V	1
C608	403 069 1504	CERAMIC	1000P	K	50V	1
C609	403 069 1207	CERAMIC	1000P	K	50V	1
C610	403 060 2807	POLYESTER	0.027U	K	50V	1
C611	403 069 1207	CERAMIC	1000P	K	50V	1
C612	403 069 1207	CERAMIC	1000P	K	50V	1
C613	403 048 7701	ELECT	0.47U	M	50V	1
C614	403 026 2209	CERAMIC	47P	J	50V	1
C615	403 038 7209	ELECT	220U	M	6.3V	1
C616	403 121 9509	CERAMIC	0.1U	Z	50V	1
C617	403 176 0704	ELECT	1000U	M	35V	1
C618	403 049 1708	ELECT	1U	M	50V	1
C619	403 069 1207	CERAMIC	1000P	K	50V	1
C620	403 043 1100	ELECT	220U	M	16V	1
C621	403 121 9509	CERAMIC	0.1U	Z	50V	1
C701	403 073 3204	CERAMIC	390P	K	50V	1
C703	403 044 0300	ELECT	47U	M	16V	1
C704	403 069 8404	CERAMIC	0.01U	Z	50V	1
C705	403 069 1207	CERAMIC	1000P	K	50V	1
C706	403 001 7601	CERAMIC	4700P	M	16V	1
C707	403 049 5508	ELECT	10U	M	50V	1
C708	403 001 6604	CERAMIC	3300P	M	16V	1
C709	403 047 9706	ELECT	0.1U	M	50V	1
C711	403 069 8404	CERAMIC	0.01U	Z	50V	1
C712	403 069 8404	CERAMIC	0.01U	Z	50V	1
C713	403 047 9706	ELECT	0.1U	M	50V	1
C714	403 047 9706	ELECT	0.1U	M	50V	1
C715	403 044 0300	ELECT	47U	M	16V	1
C718	403 044 0300	ELECT	47U	M	16V	1
C723	403 044 0300	ELECT	47U	M	16V	1
C727	403 069 1207	CERAMIC	1000P	K	50V	1
C728	403 044 0300	ELECT	47U	M	16V	1
C729	403 069 1207	CERAMIC	1000P	K	50V	1
C733	403 044 0300	ELECT	47U	M	16V	1
C751	403 069 8404	CERAMIC	0.01U	Z	50V	1
R101	401 024 7004	CARBON	1K	JA	1/6W	1
R104	401 026 3905	CARBON	330	JA	1/6W	1
R105	401 024 7400	CARBON	10K	JA	1/6W	1
R106	401 024 7004	CARBON	1K	JA	1/6W	1
R107	401 016 2604	CARBON	220	JA	1/4W	1
R108	401 026 9303	CARBON	47	JA	1/6W	1
R109	401 024 7400	CARBON	10K	JA	1/6W	1
R110	401 024 7004	CARBON	1K	JA	1/6W	1
R112	401 026 3905	CARBON	330	JA	1/6W	1
R113	401 026 4308	CARBON	3.3K	JA	1/6W	1
R114	401 026 3905	CARBON	330	JA	1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description		Q'ty
R115	401 016 2604	CARBON	220 JA 1/4W	1
R116	401 024 7400	CARBON	10K JA 1/6W	1
R117	401 026 3905	CARBON	330 JA 1/6W	1
R118	401 020 2003	CARBON	4.7K JA 1/4W	1
R119	401 027 5007	CARBON	68 JA 1/6W	1
R120	401 026 9907	CARBON	4.7K JA 1/6W	1
R122	401 025 8208	CARBON	22K JA 1/6W	1
R123	401 016 2604	CARBON	220 JA 1/4W	1
R124	401 026 9907	CARBON	4.7K JA 1/6W	1
R125	401 026 9907	CARBON	4.7K JA 1/6W	1
R126	401 025 7409	CARBON	220 JA 1/6W	1
R127	401 016 4806	CARBON	22K JA 1/4W	1
R129	401 054 8002	OXIDE-MT	100 JB 1/2W	1
R130	401 026 9907	CARBON	4.7K JA 1/6W	1
R131	401 026 3905	CARBON	330 JA 1/6W	1
R132	401 018 2800	CARBON	330 JA 1/4W	1
R133	401 026 9907	CARBON	4.7K JA 1/6W	1
R134	401 026 3905	CARBON	330 JA 1/6W	1
R135	401 012 4503	CARBON	100 JA 1/4W	1
R138	401 026 9303	CARBON	47 JA 1/6W	1
R139	401 012 4503	CARBON	100 JA 1/4W	1
R140	401 018 2800	CARBON	330 JA 1/4W	1
R141	401 026 3905	CARBON	330 JA 1/6W	1
R142	401 024 7400	CARBON	10K JA 1/6W	1
R143	401 026 4308	CARBON	3.3K JA 1/6W	1
R144	401 016 2604	CARBON	220 JA 1/4W	1
R145	401 024 7004	CARBON	1K JA 1/6W	1
R146	401 024 7400	CARBON	10K JA 1/6W	1
R147	401 026 4308	CARBON	3.3K JA 1/6W	1
R148	401 026 9907	CARBON	4.7K JA 1/6W	1
R149	401 024 7004	CARBON	1K JA 1/6W	1
R150	401 026 4308	CARBON	3.3K JA 1/6W	1
R151	401 024 7004	CARBON	1K JA 1/6W	1
R152	401 024 7004	CARBON	1K JA 1/6W	1
R153	401 026 4605	CARBON	33K JA 1/6W	1
R154	401 024 7004	CARBON	1K JA 1/6W	1
R155	401 024 7004	CARBON	1K JA 1/6W	1
R156	401 016 1102	CARBON	22 JA 1/4W	1
R157	401 026 4308	CARBON	3.3K JA 1/6W	1
R158	401 026 4308	CARBON	3.3K JA 1/6W	1
R159	401 024 6700	CARBON	100 JA 1/6W	1
R160	401 018 3807	CARBON	3.3K JA 1/4W	1
R161	401 012 4503	CARBON	100 JA 1/4W	1
R162	401 054 8002	OXIDE-MT	100 JB 1/2W	1
R163	401 054 8002	OXIDE-MT	100 JB 1/2W	1
R164	401 020 2003	CARBON	4.7K JA 1/4W	1
R172	401 012 5708	CARBON	1K JA 1/4W	1
R173	401 025 7409	CARBON	220 JA 1/6W	1
R174	401 027 5502	CARBON	6.8K JA 1/6W	1
R175	401 026 6609	CARBON	390 JA 1/6W	1
R176	401 024 7004	CARBON	1K JA 1/6W	1
R177	401 016 2604	CARBON	220 JA 1/4W	1
R180	401 024 7004	CARBON	1K JA 1/6W	1
R181	401 026 3905	CARBON	330 JA 1/6W	1
R182	401 016 2604	CARBON	220 JA 1/4W	1
R184	401 024 7004	CARBON	1K JA 1/6W	1
R185	401 024 7707	CARBON	100K JA 1/6W	1
R186	401 027 5205	CARBON	680 JA 1/6W	1
R187	401 027 5007	CARBON	68 JA 1/6W	1
R188	401 026 4308	CARBON	3.3K JA 1/6W	1
R189	401 026 3905	CARBON	330 JA 1/6W	1
R190	401 012 4503	CARBON	100 JA 1/4W	1
R191	401 012 4503	CARBON	100 JA 1/4W	1
R192	401 012 4503	CARBON	100 JA 1/4W	1
R193	401 027 2600	CARBON	5.6K JA 1/6W	1
R201	401 024 7707	CARBON	100K JA 1/6W	1
R202	401 024 7707	CARBON	100K JA 1/6W	1
R203	401 025 7805	CARBON	2.2K JA 1/6W	1
R205	401 024 7707	CARBON	100K JA 1/6W	1
R206	401 026 4308	CARBON	3.3K JA 1/6W	1
R210	401 012 8105	CARBON	100K JA 1/4W	1
R211	401 012 4503	CARBON	100 JA 1/4W	1
R212	401 014 4105	CARBON	1.5K JA 1/4W	1
R213	401 022 3107	CARBON	6.8K JA 1/4W	1
R214	401 025 4606	CARBON	18K JA 1/6W	1
R215	401 018 3807	CARBON	3.3K JA 1/4W	1
R216	401 027 2600	CARBON	5.6K JA 1/6W	1
R217	401 027 2600	CARBON	5.6K JA 1/6W	1
R218	401 024 7400	CARBON	10K JA 1/6W	1
R219	401 024 7400	CARBON	10K JA 1/6W	1
R220	401 025 8208	CARBON	22K JA 1/6W	1
R221	401 016 4806	CARBON	22K JA 1/4W	1
R222	401 054 8002	OXIDE-MT	100 JB 1/2W	1
R223	401 024 7400	CARBON	10K JA 1/6W	1
R224	401 025 8208	CARBON	22K JA 1/6W	1
R225	401 016 3809	CARBON	2.2K JA 1/4W	1
R226	401 018 2800	CARBON	330 JA 1/4W	1
R227	401 018 2800	CARBON	330 JA 1/4W	1
R228	401 025 8208	CARBON	22K JA 1/6W	1
R301	401 016 1102	CARBON	22 JA 1/4W	1
R302	401 012 7009	CARBON	10K JA 1/4W	1
R303	401 024 7707	CARBON	100K JA 1/6W	1
R309	401 017 2801	CARBON	27K JA 1/4W	1
R310	401 026 4308	CARBON	3.3K JA 1/6W	1
R311	401 024 7400	CARBON	10K JA 1/6W	1
R312	401 024 7400	CARBON	10K JA 1/6W	1
R313	401 026 4605	CARBON	33K JA 1/6W	1
R314	401 026 4605	CARBON	33K JA 1/6W	1
R315	401 018 3807	CARBON	3.3K JA 1/4W	1
R316	401 018 3807	CARBON	3.3K JA 1/4W	1
R317	401 012 8105	CARBON	100K JA 1/4W	1
R318	401 024 7707	CARBON	100K JA 1/6W	1
R319	401 012 8105	CARBON	100K JA 1/4W	1
R320	401 024 7707	CARBON	100K JA 1/6W	1
R321	401 025 8208	CARBON	22K JA 1/6W	1
R322	401 025 8208	CARBON	22K JA 1/6W	1
R323	401 012 5708	CARBON	1K JA 1/4W	1
R324	401 025 4606	CARBON	18K JA 1/6W	1
R325	401 025 4606	CARBON	18K JA 1/6W	1
R326	401 025 7805	CARBON	2.2K JA 1/6W	1
R327	401 016 3809	CARBON	2.2K JA 1/4W	1
R328	401 018 3807	CARBON	3.3K JA 1/4W	1
R329	401 018 3807	CARBON	3.3K JA 1/4W	1
R330	401 026 4308	CARBON	3.3K JA 1/6W	1
R331	401 026 4308	CARBON	3.3K JA 1/6W	1
R334	401 012 5708	CARBON	1K JA 1/4W	1
R335	401 024 7004	CARBON	1K JA 1/6W	1
R336	401 024 7707	CARBON	100K JA 1/6W	1
R337	401 012 7009	CARBON	10K JA 1/4W	1
R338	401 024 7400	CARBON	10K JA 1/6W	1
R340	401 024 7707	CARBON	100K JA 1/6W	1
R341	401 016 2604	CARBON	220 JA 1/4W	1
R342	401 016 2604	CARBON	220 JA 1/4W	1
R343	401 012 7009	CARBON	10K JA 1/4W	1
R344	401 025 7805	CARBON	2.2K JA 1/6W	1
R345	401 012 7009	CARBON	10K JA 1/4W	1
R347	401 012 7009	CARBON	10K JA 1/4W	1
R348	401 026 4308	CARBON	3.3K JA 1/6W	1
R349	401 021 3009	CARBON	5.6K JA 1/4W	1
R401	402 015 4606	FUSIBLE RES	4.7 J- 1/4W	1
R402	402 015 4606	FUSIBLE RES	4.7 J- 1/4W	1
R403	402 015 4606	FUSIBLE RES	4.7 J- 1/4W	1
R404	402 039 5603	OXIDE-MT	4.7K JB 1/2W	1
R405	401 012 4503	CARBON	100 JA 1/4W	1
R406	401 012 4503	CARBON	100 JA 1/4W	1
R408	401 024 7400	CARBON	10K JA 1/6W	1
R409	401 025 8208	CARBON	22K JA 1/6W	1
R413	401 012 7009	CARBON	10K JA 1/4W	1
R414	401 012 7009	CARBON	10K JA 1/4W	1
R415	401 024 7400	CARBON	10K JA 1/6W	1
R416	401 024 7400	CARBON	10K JA 1/6W	1
R419	401 016 9207	CARBON	27 JA 1/4W	1
R420	401 016 9207	CARBON	27 JA 1/4W	1
R421	401 027 5502	CARBON	6.8K JA 1/6W	1
R422	401 024 7004	CARBON	1K JA 1/6W	1
R423	401 024 7004	CARBON	1K JA 1/6W	1
R523	401 024 7004	CARBON	1K JA 1/6W	1
R524	401 024 7004	CARBON	1K JA 1/6W	1
R525	401 012 5708	CARBON	1K JA 1/4W	1
R526	401 012 5708	CARBON	1K JA 1/4W	1
R527	401 012 4503	CARBON	100 JA 1/4W	1
R528	401 012 7009	CARBON	10K JA 1/4W	1
R529	401 018 2800	CARBON	330 JA 1/4W	1
R530	401 012 5708	CARBON	1K JA 1/4W	1
R531	401 018 4903	CARBON	33K JA 1/4W	1
R532	401 018 2800	CARBON	330 JA 1/4W	1
R533	401 012 5708	CARBON	1K JA 1/4W	1
R601	401 012 4503	CARBON	100 JA 1/4W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R602	401 025 8208	CARBON 22K JA 1/6W	1
R603	401 025 8208	CARBON 22K JA 1/6W	1
R604	401 026 4605	CARBON 33K JA 1/6W	1
R605	401 027 0309	CARBON 47K JA 1/6W	1
R606	401 024 7707	CARBON 100K JA 1/6W	1
R607	401 026 9907	CARBON 4.7K JA 1/6W	1
R608	401 026 9907	CARBON 4.7K JA 1/6W	1
R609	401 026 4308	CARBON 3.3K JA 1/6W	1
R610	401 026 6609	CARBON 390 JA 1/6W	1
R611	401 025 7409	CARBON 220 JA 1/6W	1
R612	401 026 3905	CARBON 330 JA 1/6W	1
R613	401 025 8208	CARBON 22K JA 1/6W	1
R614	401 018 3807	CARBON 3.3K JA 1/4W	1
R616	401 012 5708	CARBON 1K JA 1/4W	1
R617	401 025 7805	CARBON 2.2K JA 1/6W	1
R618	401 026 4308	CARBON 3.3K JA 1/6W	1
R619	401 012 5708	CARBON 1K JA 1/4W	1
R622	401 026 3905	CARBON 330 JA 1/6W	1
R623	401 012 4503	CARBON 100 JA 1/4W	1
R624	401 025 8703	CARBON 220K JA 1/6W	1
R625	401 024 7400	CARBON 10K JA 1/6W	1
R626	401 024 7400	CARBON 10K JA 1/6W	1
R701	401 012 4503	CARBON 100 JA 1/4W	1
R702	401 026 7002	CARBON 3.9K JA 1/6W	1
R703	401 025 8208	CARBON 22K JA 1/6W	1
R704	401 024 7004	CARBON 1K JA 1/6W	1
R705	401 026 4308	CARBON 3.3K JA 1/6W	1
R706	401 016 2604	CARBON 220 JA 1/4W	1
R707	401 024 7004	CARBON 1K JA 1/6W	1
R708	401 024 7707	CARBON 100K JA 1/6W	1
R709	401 024 7004	CARBON 1K JA 1/6W	1
R710	401 025 8208	CARBON 22K JA 1/6W	1
R711	401 024 7400	CARBON 10K JA 1/6W	1
R712	401 027 0309	CARBON 47K JA 1/6W	1
R714	401 025 8208	CARBON 22K JA 1/6W	1
R715	401 025 8208	CARBON 22K JA 1/6W	1
R716	401 024 7707	CARBON 100K JA 1/6W	1
R717	401 024 7707	CARBON 100K JA 1/6W	1
R718	401 024 7707	CARBON 100K JA 1/6W	1
R720	401 016 2604	CARBON 220 JA 1/4W	1
R721	401 026 4308	CARBON 3.3K JA 1/6W	1
R722	401 026 9907	CARBON 4.7K JA 1/6W	1
R723	401 024 7400	CARBON 10K JA 1/6W	1
R724	401 024 7004	CARBON 1K JA 1/6W	1
R725	401 026 4308	CARBON 3.3K JA 1/6W	1
R726	401 026 9907	CARBON 4.7K JA 1/6W	1
R727	401 025 1308	CARBON 150 JA 1/6W	1
R729	401 016 2604	CARBON 220 JA 1/4W	1
R730	401 016 2604	CARBON 220 JA 1/4W	1
R732	401 024 7004	CARBON 1K JA 1/6W	1
R733	401 026 4308	CARBON 3.3K JA 1/6W	1
R734	401 026 4308	CARBON 3.3K JA 1/6W	1
R735	401 026 4308	CARBON 3.3K JA 1/6W	1
R736	401 026 4308	CARBON 3.3K JA 1/6W	1
R738	401 026 4308	CARBON 3.3K JA 1/6W	1
R739	401 018 2800	CARBON 330 JA 1/4W	1
R740	401 016 2604	CARBON 220 JA 1/4W	1
R743	401 018 3807	CARBON 3.3K JA 1/4W	1
R744	401 024 7400	CARBON 10K JA 1/6W	1
R745	401 024 7400	CARBON 10K JA 1/6W	1
R747	401 025 8208	CARBON 22K JA 1/6W	1
R748	401 012 5708	CARBON 1K JA 1/4W	1
R749	401 012 5708	CARBON 1K JA 1/4W	1
R750	401 012 5708	CARBON 1K JA 1/4W	1
R751	401 012 5708	CARBON 1K JA 1/4W	1
R752	401 024 7004	CARBON 1K JA 1/6W	1
R753	401 026 4902	CARBON 330K JA 1/6W	1
R755	401 026 4308	CARBON 3.3K JA 1/6W	1
R758	401 026 4308	CARBON 3.3K JA 1/6W	1
ASSY,PCB,VCO			
47	620 204 7447	Assy,PCB,VCO	1
	620 197 6427	Shield,TU-2	1
CN103	620 204 9144	Connector-S,3P#5124-Nbhpb	1
CN104	620 204 9144	Connector-S,3P#5124-Nbhpb	1
CN105	620 204 9144	Connector-S,3P#5124-Nbhpb	1
TC102	620 189 9108	Trimmer 20PF	1
T106	620 204 9052	Trans,IF,10.7MHz VCO PLL	1
Q117	405 030 7904	TR 2SC1740SLN-E-T	1
or	405 030 8109	TR 2SC1740SLN-TP-S	1
Q118	405 016 9205	TR 2SC3067-G	1
or	405 016 9106	TR 2SC3067-F	1
D117	407 051 6805	ZENER DIODE GZS5.1Z-BT	1
or	407 063 8705	ZENER DIODE MTZJ5.1C	1
D118	407 125 8209	DIODE HSS271	1
or	407 012 4208	DIODE 1SS131-T-77	1
D119	407 130 7402	VARACTOR DI KV1226-X	1
or	407 130 7501	VARACTOR DI KV1226-Y	1
C158	403 001 1906	CERAMIC 0.01U M 16V	1
C159	403 043 1100	ELECT 220U M 16V	1
C161	403 009 1908	CERAMIC 10P J 50V	1
C162	403 009 1908	CERAMIC 10P J 50V	1
C163	403 017 0108	CERAMIC 20P J 50V	1
C164	403 017 0108	CERAMIC 20P J 50V	1
C165	403 121 9509	CERAMIC 0.1U Z 50V	1
C166	403 001 1906	CERAMIC 0.01U M 16V	1
C167	403 001 1906	CERAMIC 0.01U M 16V	1
C168	403 049 5508	ELECT 10U M 50V	1
R165	401 024 7004	CARBON 1K JA 1/6W	1
R166	401 012 5708	CARBON 1K JA 1/4W	1
R167	401 024 7004	CARBON 1K JA 1/6W	1
R168	401 024 7004	CARBON 1K JA 1/6W	1
R169	401 025 4200	CARBON 1.8K JA 1/6W	1
R170	401 027 5205	CARBON 680 JA 1/6W	1
R171	401 027 5205	CARBON 680 JA 1/6W	1
ASSY,PCB,POWER SWITCH			
48	620 204 7454	Assy,PCB,Power Switch	1
CN401	620 200 2583	Socket,Holder,6P	1
S401	620 204 8628	Switch,Push,1K-4C-2T	1
C452	403 074 2701	CERAMIC 0.047U Z 50V	1
or	403 143 2809	CERAMIC 0.047U Z 50V	1
C453	403 074 2701	CERAMIC 0.047U Z 50V	1
or	403 143 2809	CERAMIC 0.047U Z 50V	1
C454	403 074 2701	CERAMIC 0.047U Z 50V	1
or	403 143 2809	CERAMIC 0.047U Z 50V	1
ASSY,PCB,FM-FE,EU5,KV1320			
49	620 204 7485	Assy,PCB,FM-FE,EU5,KV1320	1
	620 022 2877	Terminal 3P	1
	620 197 6427	Shield,TU-2	4
	620 186 7275	Plate Earth	2
CN101	620 204 9175	Connector-P,4P TXG-P04PA1	1
CN102	620 204 9199	Connector-P,7P,TXG-P07PA1	1
L1	620 197 9442	Inductor 470UH K	1
L2	620 204 8673	Coil,Ferrite,75NH,RF-1,FM	1
L3	620 204 8673	Coil,Ferrite,75NH,RF-1,FM	1
L4	620 204 8680	Coil,Ferrite,75NH,RF-2,FM	1
L5	620 204 8697	Coil,Ferrite,75NH,RF-3,FM	1
L6	620 197 9251	Inductor 2.2UH M	1
L7	620 197 9251	Inductor 2.2UH M	1
L9	620 206 5052	Coil,ALM,49NH,OSC FM	1
or	620 204 8703	Coil,Ferrite,49NH,OSC,FM	1
L10	620 197 9251	Inductor 2.2UH M	1
L13	620 197 9251	Inductor 2.2UH M	1
L15	620 202 0112	Inductor 2.2UH K	1
L17	620 197 9251	Inductor 2.2UH M	1
TC1	620 007 0867	Trimmer 10PF	1
TC2	620 007 0867	Trimmer 10PF	1
TC3	620 007 0867	Trimmer 10PF	1
TC4	620 007 0867	Trimmer 10PF	1
TP1	620 204 9168	Connector-P,2P#3022-02A	1
T1	620 204 9038	Trans,IF,10.7MHz DBM MIX	1
Q1	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q2	405 019 3903	TR 2SC536-G-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q3	405 028 5202	TR 3SK73-GR	1
or	405 100 1504	TR 3SK73-BL	1
Q4	405 027 5807	TR 2SK427-T	1
or	405 027 5906	TR 2SK427-U	1
or	405 027 5708	TR 2SK427-S	1
Q5	405 027 5807	TR 2SK427-T	1
or	405 027 5906	TR 2SK427-U	1
or	405 027 5708	TR 2SK427-S	1
Q6	405 016 5900	TR 2SC2999-E-SPA-AC	1
or	405 036 7403	TR 2SC2999-F-SPA-AC	1
Q7	405 026 9608	TR 2SK241-GR-TPE4	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
Q8	405 012 5904	TR 2SC1923-Y- (TPE2)	1
Q9	405 026 9608	TR 2SK241-GR-TPE4	1
D1	407 120 1502	DIODE 1SV187	1
D2	407 120 1502	DIODE 1SV187	1
D3	407 012 4604	DIODE 1SS135-TA	1
D4	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D5	407 099 6201	ZENER DIODE MTZJ10C-T-77	1
or	407 099 6102	ZENER DIODE MTZJ10B-T-77	1
D6	407 130 8201	VARACTOR DI KV1320-5	1
D7	407 130 8201	VARACTOR DI KV1320-5	1
D8	407 130 8201	VARACTOR DI KV1320-5	1
D9	407 130 8201	VARACTOR DI KV1320-5	1
D10	407 130 8201	VARACTOR DI KV1320-5	1
D12	407 063 8309	ZENER DIODE MTZJ11C	1
or	407 099 6409	ZENER DIODE MTZJ11B-T-77	1
or	407 051 4108	ZENER DIODE GZS11Y-BT	1
D19	407 099 5808	ZENER DIODE MTZJ7.5A-T-77	1
or	407 051 7802	ZENER DIODE GZS7.5Y-BT	1
C1	403 069 1207	CERAMIC 1000P K 50V	1
C2	403 069 1207	CERAMIC 1000P K 50V	1
C3	403 069 1207	CERAMIC 1000P K 50V	1
C4	403 069 1207	CERAMIC 1000P K 50V	1
C5	403 069 1207	CERAMIC 1000P K 50V	1
C6	403 069 1207	CERAMIC 1000P K 50V	1
C7	403 069 1207	CERAMIC 1000P K 50V	1
C8	403 121 9509	CERAMIC 0.1U Z 50V	1
C9	403 012 6006	CERAMIC 15P J 50V	1
C10	403 009 1809	CERAMIC 10P J 50V	1
C11	403 069 1207	CERAMIC 1000P K 50V	1
C12	403 068 9402	CERAMIC 100P K 50V	1
C13	403 069 1207	CERAMIC 1000P K 50V	1
C14	403 069 1207	CERAMIC 1000P K 50V	1
C15	403 010 7807	CERAMIC 12P J 50V	1
C16	403 012 6006	CERAMIC 15P J 50V	1
C17	403 026 2209	CERAMIC 47P J 50V	1
C18	403 069 1207	CERAMIC 1000P K 50V	1
C19	403 069 1207	CERAMIC 1000P K 50V	1
C20	403 001 1906	CERAMIC 0.01U M 16V	1
C21	403 068 9402	CERAMIC 100P K 50V	1
C22	403 068 9402	CERAMIC 100P K 50V	1
C23	403 069 1207	CERAMIC 1000P K 50V	1
C24	403 012 5900	CERAMIC 15P J 50V	1
C25	403 022 5907	CERAMIC 33P J 50V	1
C26	403 009 1908	CERAMIC 10P J 50V	1
C28	403 177 9607	CERAMIC 18P J 50V	1
or	403 014 0705	CERAMIC 18P J 50V	1
C29	403 069 1207	CERAMIC 1000P K 50V	1
C30	403 050 1605	ELECT 2.2U M 50V	1
C31	403 069 1207	CERAMIC 1000P K 50V	1
C32	403 007 0804	CERAMIC 1P M 50V	1
C33	403 068 9402	CERAMIC 100P K 50V	1
C34	403 069 1207	CERAMIC 1000P K 50V	1
C35	403 007 1108	CERAMIC 1P M 50V	1
C36	403 069 1207	CERAMIC 1000P K 50V	1
C37	403 001 1906	CERAMIC 0.01U M 16V	1
C38	403 044 0300	ELECT 47U M 16V	1
C39	403 044 0300	ELECT 47U M 16V	1
C40	403 001 1906	CERAMIC 0.01U M 16V	1
C41	403 044 0300	ELECT 47U M 16V	1
C43	403 001 1906	CERAMIC 0.01U M 16V	1
C49	403 069 1207	CERAMIC 1000P K 50V	1
R1	401 016 3809	CARBON 2.2K JA 1/4W	1
R2	401 012 8105	CARBON 100K JA 1/4W	1
R3	401 024 7707	CARBON 100K JA 1/6W	1
R4	401 024 6700	CARBON 100 JA 1/6W	1
R5	401 024 6700	CARBON 100 JA 1/6W	1
R6	401 024 7004	CARBON 1K JA 1/6W	1
R8	401 024 7004	CARBON 1K JA 1/6W	1
R10	401 025 8208	CARBON 22K JA 1/6W	1
R13	401 018 4903	CARBON 33K JA 1/4W	1
R14	401 018 4903	CARBON 33K JA 1/4W	1
R15	401 012 5708	CARBON 1K JA 1/4W	1
R16	401 012 4503	CARBON 100 JA 1/4W	1
R17	401 024 7707	CARBON 100K JA 1/6W	1
R18	401 027 0309	CARBON 47K JA 1/6W	1
R19	401 024 7707	CARBON 100K JA 1/6W	1
R20	401 016 1508	CARBON 22 JA 1/4W	1
R21	401 018 4903	CARBON 33K JA 1/4W	1
R22	401 018 4903	CARBON 33K JA 1/4W	1
R23	401 025 7409	CARBON 220 JA 1/6W	1
R24	401 025 7409	CARBON 220 JA 1/6W	1
R25	401 025 7409	CARBON 220 JA 1/6W	1
R26	401 025 7102	CARBON 22 JA 1/6W	1
R27	401 025 7102	CARBON 22 JA 1/6W	1
R28	401 025 7409	CARBON 220 JA 1/6W	1
R29	401 025 7409	CARBON 220 JA 1/6W	1
R30	401 027 2600	CARBON 5.6K JA 1/6W	1
R31	401 026 9907	CARBON 4.7K JA 1/6W	1
R32	401 025 7805	CARBON 2.2K JA 1/6W	1
R33	401 025 8208	CARBON 22K JA 1/6W	1
R34	401 024 7004	CARBON 1K JA 1/6W	1
R35	401 026 3905	CARBON 330 JA 1/6W	1
R36	401 025 1902	CARBON 15K JA 1/6W	1
R37	401 025 7409	CARBON 220 JA 1/6W	1
R38	401 025 7805	CARBON 2.2K JA 1/6W	1
R39	401 024 6700	CARBON 100 JA 1/6W	1
R41	401 026 3905	CARBON 330 JA 1/6W	1
R42	401 024 7004	CARBON 1K JA 1/6W	1
		ASSY,PCB,FM-FE,EU5,SVC211	
49	620 208 1335	Assy,PCB,FM-FE,EU5,SVC211	1
	620 022 2877	Terminal 3P	1
	620 197 6427	Shield,TU-2	4
	620 186 7275	Plate Earth	2
CN101	620 204 9175	Connector-P,4P TXG-P04PA1	1
CN102	620 204 9199	Connector-P,7P,TXG-P07PA1	1
L1	620 197 9442	Inductor 470UH K	1
L2	620 204 8673	Coil,Ferrite,75NH,RF-1,FM	1
L3	620 204 8673	Coil,Ferrite,75NH,RF-1,FM	1
L4	620 204 8680	Coil,Ferrite,75NH,RF-2,FM	1
L5	620 204 8697	Coil,Ferrite,75NH,RF-3,FM	1
L6	620 197 9251	Inductor 2.2UH M	1
L7	620 197 9251	Inductor 2.2UH M	1
L9	620 206 5052	Coil,ALM,49NH,OSC FM	1
or	620 204 8703	Coil,Ferrite,49NH,OSC,FM	1
L10	620 197 9251	Inductor 2.2UH M	1
L13	620 197 9251	Inductor 2.2UH M	1
L15	620 202 0112	Inductor 2.2UH K	1
L17	620 197 9251	Inductor 2.2UH M	1
TC1	620 007 0867	Trimmer 10PF	1
TC2	620 007 0867	Trimmer 10PF	1
TC3	620 007 0867	Trimmer 10PF	1
TC4	620 007 0867	Trimmer 10PF	1
TP1	620 204 9168	Connector-P,2P#3022-02A	1
T1	620 204 9038	Trans,IF,10.7MHz DBM MIX	1
Q1	405 096 0000	TR DTA124-EL-TL2	1
or	405 003 7702	TR 2SA1346-AC	1
Q3	405 028 5202	TR 3SK73-GR	1
or	405 100 1504	TR 3SK73-BL	1
Q4	405 027 5807	TR 2SK427-T	1
or	405 027 5906	TR 2SK427-U	1
or	405 027 5708	TR 2SK427-S	1
Q5	405 027 5807	TR 2SK427-T	1
or	405 027 5906	TR 2SK427-U	1
or	405 027 5708	TR 2SK427-S	1
Q6	405 016 5900	TR 2SC2999-E-SPA-AC	1
or	405 036 7403	TR 2SC2999-F-SPA-AC	1
Q7	405 026 9608	TR 2SK241-GR-TPE4	1
Q8	405 012 5904	TR 2SC1923-Y- (TPE2)	1
Q9	405 026 9608	TR 2SK241-GR-TPE4	1
D1	407 120 1502	DIODE 1SV187	1
D2	407 120 1502	DIODE 1SV187	1
D3	407 012 4604	DIODE 1SS135-TA	1
D4	407 125 8209	DIODE HSS271	1
or	407 008 0405	DIODE GMB01-BT	1
or	407 012 4208	DIODE 1SS131-T-77	1
D6	407 000 3503	VARACTOR DI SVC211SP	1
D7	407 000 3503	VARACTOR DI SVC211SP	1
D8	407 000 3503	VARACTOR DI SVC211SP	1
D9	407 000 3503	VARACTOR DI SVC211SP	1
D10	407 000 3503	VARACTOR DI SVC211SP	1
D12	407 063 8309	ZENER DIODE MTZJ11C	1
or	407 099 6409	ZENER DIODE MTZJ11B-T-77	1
or	407 051 4108	ZENER DIODE GZS11Y-BT	1
D19	407 099 5808	ZENER DIODE MTZJ7.5A-T-77	1
or	407 051 7802	ZENER DIODE GZS7.5Y-BT	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C1	403 069 1207	CERAMIC	1000P	K	50V	1
C2	403 069 1207	CERAMIC	1000P	K	50V	1
C3	403 069 1207	CERAMIC	1000P	K	50V	1
C4	403 069 1207	CERAMIC	1000P	K	50V	1
C5	403 069 1207	CERAMIC	1000P	K	50V	1
C6	403 069 1207	CERAMIC	1000P	K	50V	1
C7	403 069 1207	CERAMIC	1000P	K	50V	1
C8	403 121 9509	CERAMIC	0.1U	Z	50V	1
C9	403 012 6006	CERAMIC	15P	J	50V	1
C10	403 009 1809	CERAMIC	10P	J	50V	1
C11	403 069 1207	CERAMIC	1000P	K	50V	1
C12	403 068 9402	CERAMIC	100P	K	50V	1
C13	403 069 1207	CERAMIC	1000P	K	50V	1
C14	403 069 1207	CERAMIC	1000P	K	50V	1
C15	403 010 7807	CERAMIC	12P	J	50V	1
C16	403 012 6006	CERAMIC	15P	J	50V	1
C17	403 026 2209	CERAMIC	47P	J	50V	1
C18	403 069 1207	CERAMIC	1000P	K	50V	1
C19	403 069 1207	CERAMIC	1000P	K	50V	1
C20	403 001 1906	CERAMIC	0.01U	M	16V	1
C21	403 068 9402	CERAMIC	100P	K	50V	1
C22	403 068 9402	CERAMIC	100P	K	50V	1
C23	403 069 1207	CERAMIC	1000P	K	50V	1
C24	403 012 5900	CERAMIC	15P	J	50V	1
C25	403 022 5907	CERAMIC	33P	J	50V	1
C26	403 009 1908	CERAMIC	10P	J	50V	1
C28	403 177 9607	CERAMIC	18P	J	50V	1
or	403 014 0705	CERAMIC	18P	J	50V	1
C29	403 069 1207	CERAMIC	1000P	K	50V	1
C30	403 050 1605	ELECT	2.2U	M	50V	1
C31	403 069 1207	CERAMIC	1000P	K	50V	1
C32	403 007 0804	CERAMIC	1P	M	50V	1
C33	403 068 9402	CERAMIC	100P	K	50V	1
C34	403 069 1207	CERAMIC	1000P	K	50V	1
C35	403 007 1108	CERAMIC	1P	M	50V	1
C36	403 069 1207	CERAMIC	1000P	K	50V	1
C37	403 001 1906	CERAMIC	0.01U	M	16V	1
C38	403 044 0300	ELECT	47U	M	16V	1
C39	403 044 0300	ELECT	47U	M	16V	1
C40	403 001 1906	CERAMIC	0.01U	M	16V	1
C41	403 044 0300	ELECT	47U	M	16V	1
C43	403 001 1906	CERAMIC	0.01U	M	16V	1
C49	403 069 1207	CERAMIC	1000P	K	50V	1
R1	401 016 3809	CARBON	2.2K	JA	1/4W	1
R2	401 012 8105	CARBON	100K	JA	1/4W	1
R3	401 024 7707	CARBON	100K	JA	1/6W	1
R4	401 024 6700	CARBON	100	JA	1/6W	1
R5	401 024 6700	CARBON	100	JA	1/6W	1
R6	401 024 7004	CARBON	1K	JA	1/6W	1
R8	401 024 7004	CARBON	1K	JA	1/6W	1
R13	401 018 4903	CARBON	33K	JA	1/4W	1
R14	401 018 4903	CARBON	33K	JA	1/4W	1
R15	401 012 5708	CARBON	1K	JA	1/4W	1
R16	401 012 4503	CARBON	100	JA	1/4W	1
R17	401 024 7707	CARBON	100K	JA	1/6W	1
R18	401 027 0309	CARBON	47K	JA	1/6W	1
R19	401 024 7707	CARBON	100K	JA	1/6W	1
R20	401 016 1508	CARBON	22	JA	1/4W	1
R21	401 018 4903	CARBON	33K	JA	1/4W	1
R22	401 018 4903	CARBON	33K	JA	1/4W	1
R23	401 025 7409	CARBON	220	JA	1/6W	1
R24	401 025 7409	CARBON	220	JA	1/6W	1
R25	401 025 7409	CARBON	220	JA	1/6W	1
R26	401 025 7102	CARBON	22	JA	1/6W	1
R27	401 025 7102	CARBON	22	JA	1/6W	1
R28	401 025 7409	CARBON	220	JA	1/6W	1
R29	401 025 7409	CARBON	220	JA	1/6W	1
R30	401 027 2600	CARBON	5.6K	JA	1/6W	1
R31	401 026 9907	CARBON	4.7K	JA	1/6W	1
R32	401 025 7805	CARBON	2.2K	JA	1/6W	1
R33	401 025 8208	CARBON	22K	JA	1/6W	1
R34	401 024 7004	CARBON	1K	JA	1/6W	1
R35	401 026 3905	CARBON	330	JA	1/6W	1
R36	401 025 1902	CARBON	15K	JA	1/6W	1
R37	401 025 7409	CARBON	220	JA	1/6W	1
R38	401 025 7805	CARBON	2.2K	JA	1/6W	1
R39	401 024 6700	CARBON	100	JA	1/6W	1
R41	401 026 3905	CARBON	330	JA	1/6W	1
R42	401 024 7004	CARBON	1K	JA	1/6W	1

Ref. No.	Part No.	Description	Q'ty

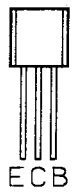
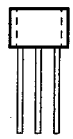
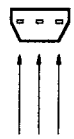
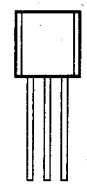
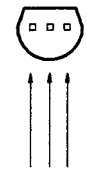
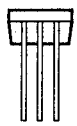
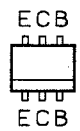
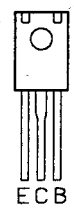
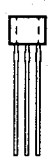
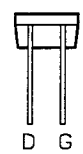
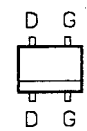
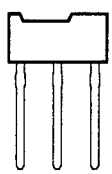
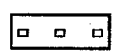
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

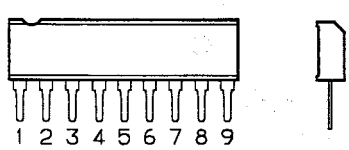
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA970 2SC1923 2SC3792 2SJ103			2SA608 2SB808 2SC1740 2SC2839 2SC2999 2SC3330 2SC536 2SD1012		
2SK241 2SK669			2SK246		
2SC3067			2SB1142 2SD1682		
2SK427			3SK73		
DTA124 DTA144 DTC144					

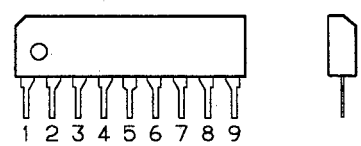
TERMINAL NAME

B → BASE	S → SOURCE
C → COLLECTOR	G → GATE
E → EMITTER	D → DRAIN

BA715 FRONT/SIDE VIEWS

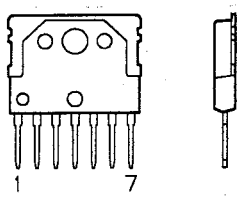


LA1060 FRONT/SIDE VIEWS
NJM2068S-D FRONT/SIDE VIEWS

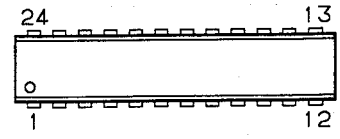


IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

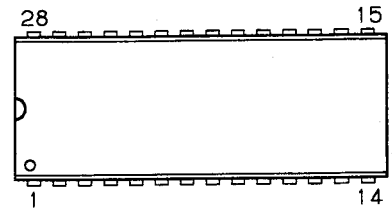
LA5667 FRONT/SIDE VIEWS



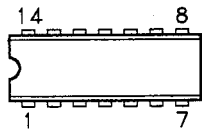
LA1266 TOP VIEW



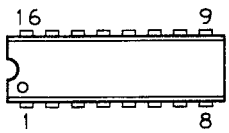
LA3450 TOP VIEW



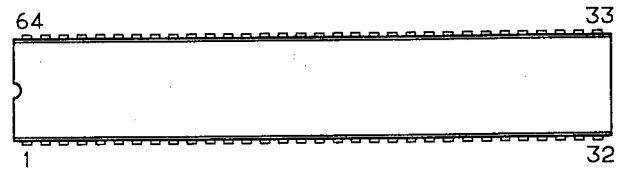
TC4066BP TOP VIEW
TC4093BP TOP VIEW



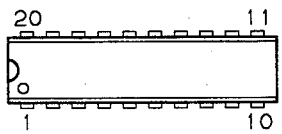
LA1235 TOP VIEW



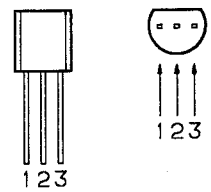
TMP47C870N-4674Z TOP VIEW



LM7000 TOP VIEW

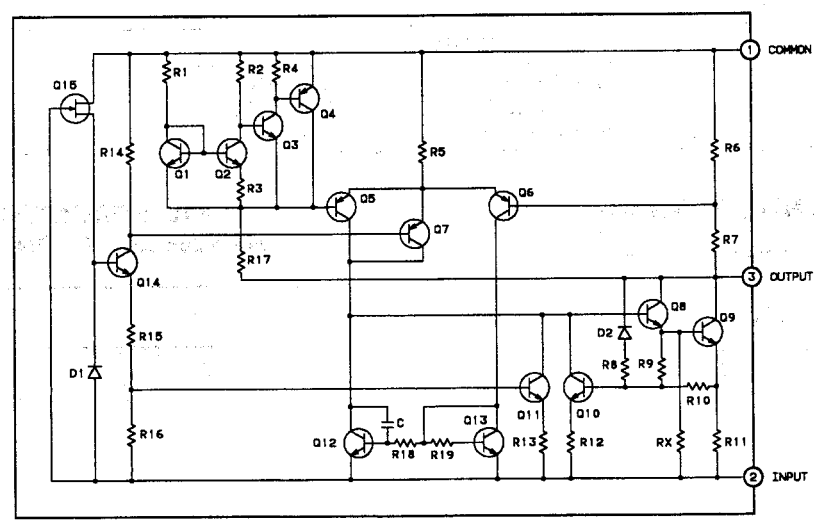


NJM79M12FA TOP/SIDE VIEWS



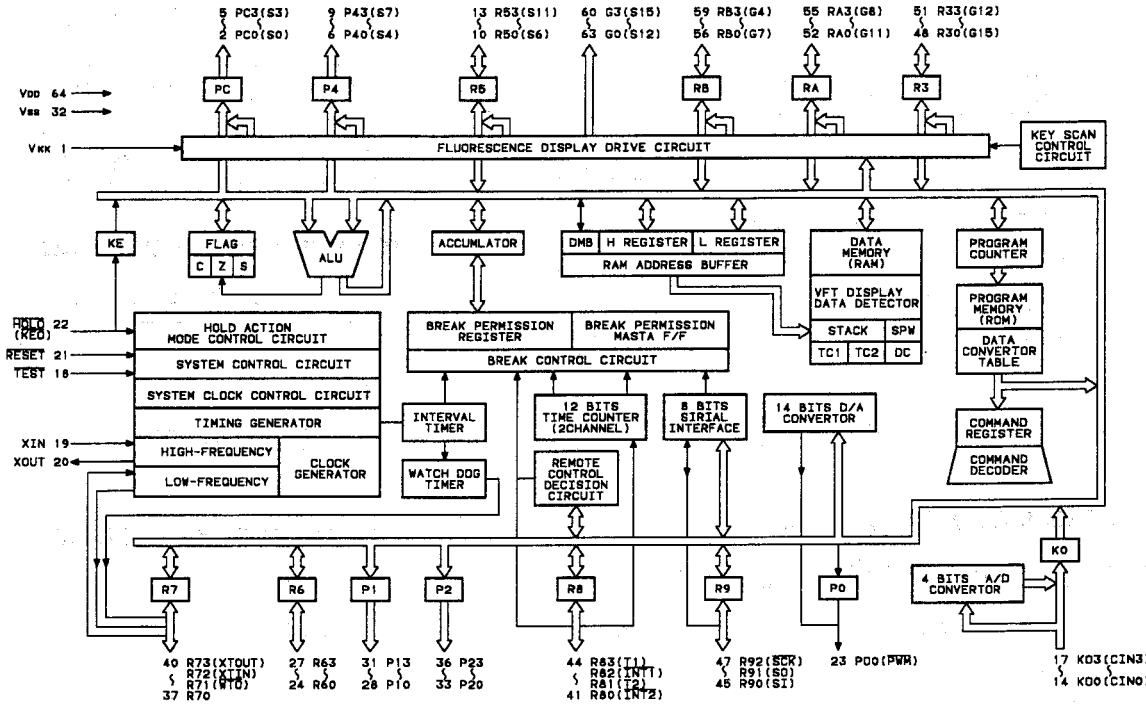
IC BLOCK DIAGRAM

NJM79M12FA BLOCK DIAGRAM

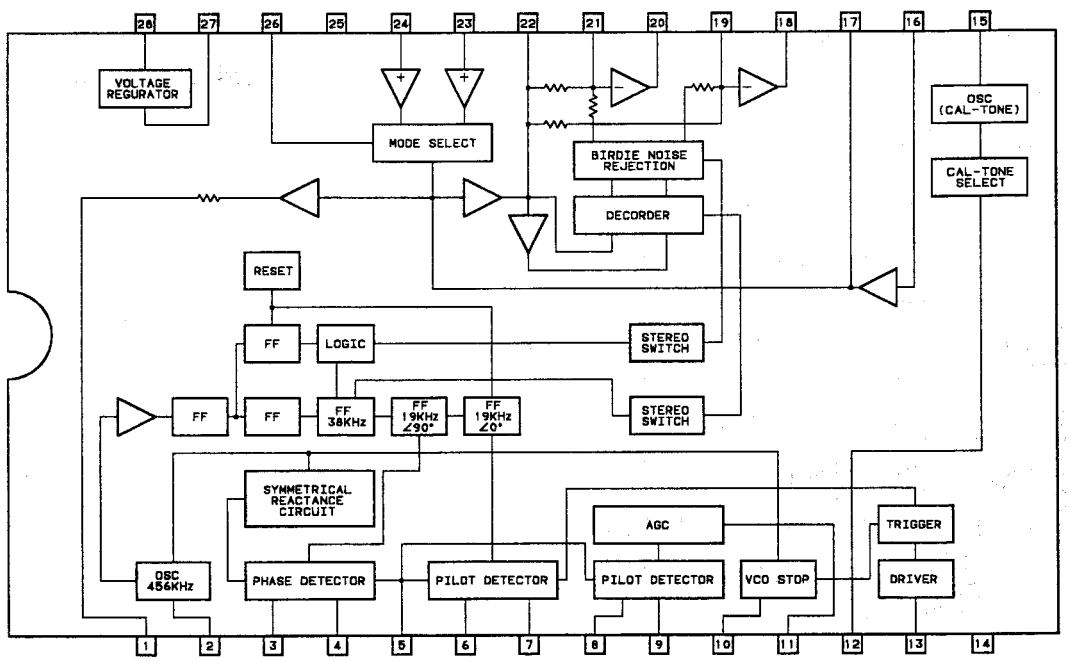


IC BLOCK DIAGRAM (Continued)

TMP47C870N-4674Z BLOCK DIAGRAM

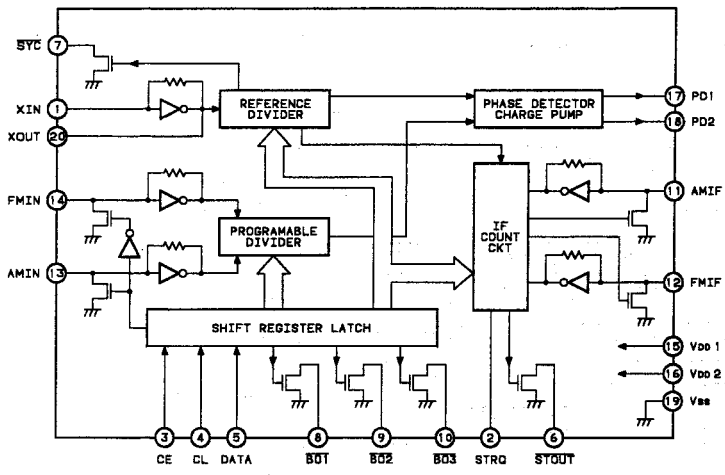


LA3450 BLOCK DIAGRAM

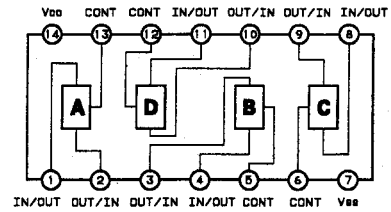


IC BLOCK DIAGRAM (Continued)

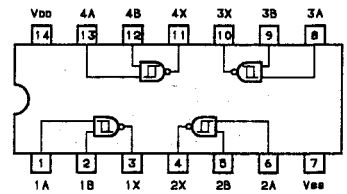
LM7000 BLOCK DIAGRAM



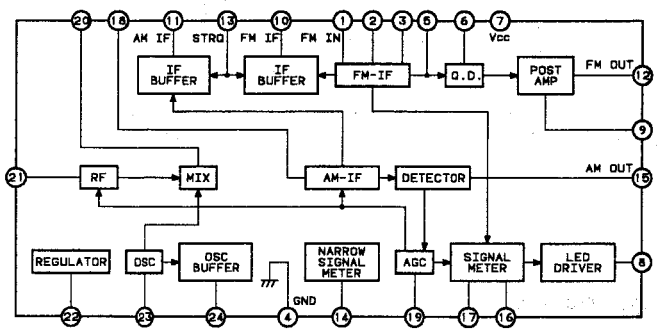
TC4066BP BLOCK DIAGRAM



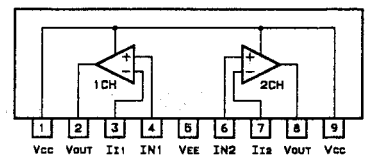
TC4093BP BLOCK DIAGRAM



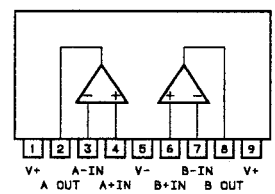
LA1266 BLOCK DIAGRAM



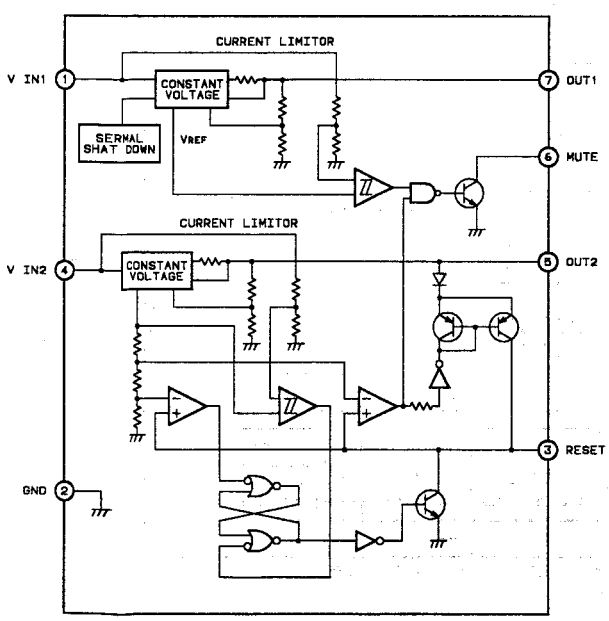
BA715 BLOCK DIAGRAM



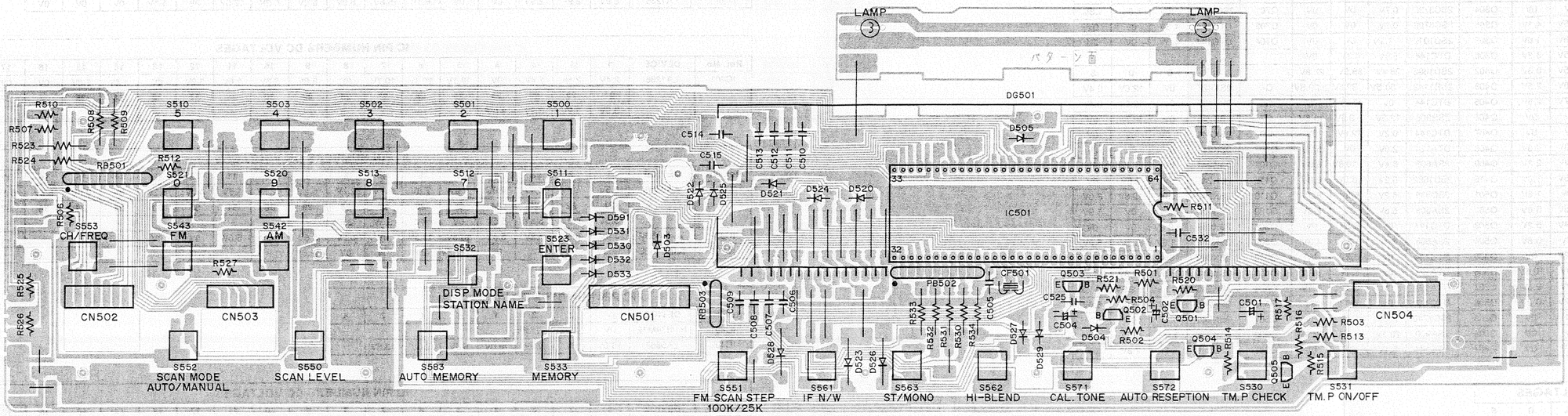
NJM2068S-D BLOCK DIAGRAM



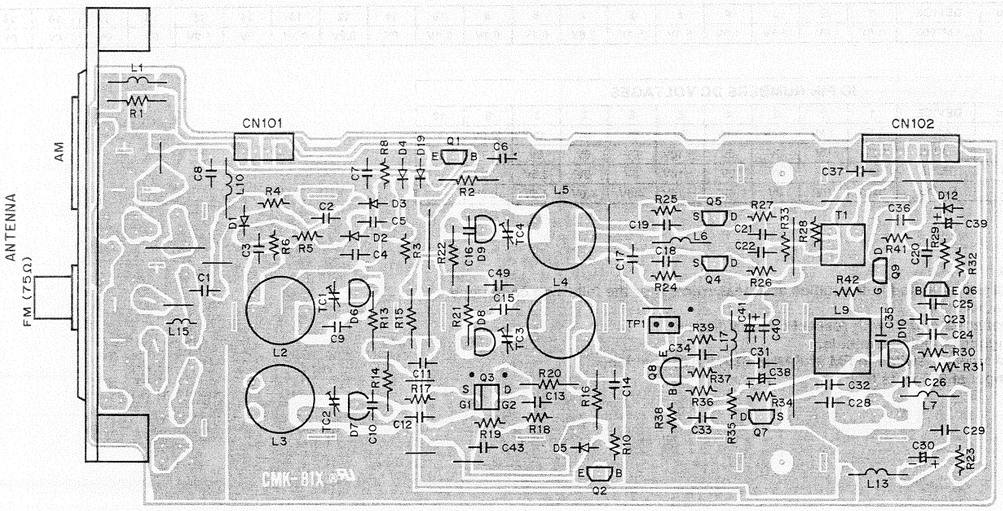
LA5667 BLOCK DIAGRAM



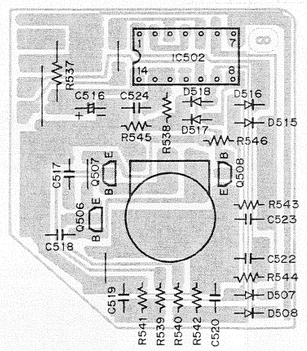
MICON P.C.BOARD
(BOTTOM VIEW)



FM-FE P.C.BOARD
(BOTTOM VIEW)



JOG DIAL P.C.BOARD
(BOTTOM VIEW)



TRANSISTOR DC VOLTAGES

Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E
Q1	DTA124	6.7V	13.4V	13.5V	Q303	DTA124	−9.9V	13.5V	13.5V	Q608	DTA124	0V	13.4V	13.5V
Q2	2SC536	0V	0V	0V	Q304	2SC3792	0.7V	0V	0V	Q701	2SC3330	1.9V	8.9V	1.3V
Q6	2SC2999	4.8V	10.5V	4.1V	Q305	2SC3792	0.7V	0V	0V	Q703	DTC144	4.3V	0V	0V
Q8	2SC1923	0.9V	11.6V	1.6V	Q307	2SD1012	−1.1V	0V	0V	Q704	DTC144	4.3V	0V	0V
Q102	2SC2839	4.0V	12.5V	3.3V	Q308	DTC144	5.0V	0.1V	0V					
Q103	2SC2839	4.0V	12.5V	3.3V	Q402	2SD1682	28.4V	38.9V	27.8V			G	D	S
Q104	2SC2839	3.1V	12.8V	2.5V	Q403	2SB1142	−30.5V	−39.5V	−29.8V	Q4	2SK427	0V	12.6V	0.4V
Q105	2SC2839	3.1V	12.7V	2.5V	Q405	DTC144	0V	13.5V	0V	Q5	2SK427	0V	12.6V	0.4V
Q106	2SC2839	0V	0V	0V	Q406	2SB808	13.5V	−9.9V	13.5V	Q7	2SK241	0V	10.7V	0V
Q107	2SC2839	0V	0V	0V	Q407	DTC144	0.2V	12.6V	0V	Q9	2SK241	8.8V	0V	0V
Q111	2SC2839	3.0V	12.3V	2.3V	Q408	DTA124	2.0V	0V	5.6V	Q108	2SK241	0V	0V	0V
Q112	2SC2839	3.0V	12.2V	2.3V	Q409	2SA608	6.4V	−10.8V	6.8V	Q109	2SK241	0V	0V	0V
Q113	2SC2839	1.7V	12.5V	1.0V	Q410	2SD1682	6.2V	18.0V	6.8V	Q110	2SK241	0V	9.6V	0V
Q117	2SC1740	2.2V	6.0V	1.6V	Q501	2SC536	6.2V	5.5V	6.2V	Q119	2SK246	5.8V	12.8V	6.0V
Q118	2SC3067	6.2V	11.5V	6.0V	Q502	2SA608	5.5V	0V	2.3V	Q120	2SJ103	5.8V	0V	5.9V
Q121	2SC1740	5.8V	12.4V	5.2V	Q503	DTC144	0V	5.3V	0V	Q306	2SK669	−9.9V	0V	0V
Q122	2SC1740	1.4V	5.2V	0.8V	Q504	2SA608	6.1V	−1.3V	4.8V	Q309	2SK669	13.5V	5.2V	5.2V
Q126	2SC3330	0V	13.2V	0V	Q505	DTC144	0V	6.2V	0V	Q310	2SK669	0V	5.2V	5.2V
Q127	2SA608	13.2V	0.9V	13.5V	Q506	DTA124	0V	6.1V	6.1V	Q401	2SK246	28.5V	38.3V	28.5V
Q202	DTA144	3.1V	2.0V	2.0V	Q507	DTA124	0V	6.1V	6.1V	Q404	2SK246	−11.9V	−9.9V	−11.9V
Q203	DTA124	10.3V	10.2V	0.2V	Q508	DTC144	0V	5.6V	0V	Q413	2SK246	6.8V	18.0V	6.8V
Q204	DTC144	0V	10.1V	0V	Q603	2SC1740	0.7V	1.4V	0V	Q601	2SK669	0.1V	0V	0V
Q205	DTC144	4.3V	0V	0V	Q604	2SA970	23.1V	1.4V	22.9V	Q602	2SK246	1.0V	4.9V	1.7V
Q302	DTC144	0.1V	4.7V	0V	Q607	DTC144	8.1V	0V	0V	Q605	2SK669	1.1V	7.8V	0V

TRANSISTOR DC VOLTAGES

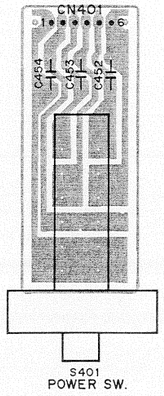
Ref. No.	DEVICE	G1	G2	D	S
Q3	3SK73	0V	4.3V	12.7V	0V

he above listed Q106 ~ Q109 shows the voltage when the FM-IF switch is set to the WIDE position. IF set to NARROW, refor to the llowing table.

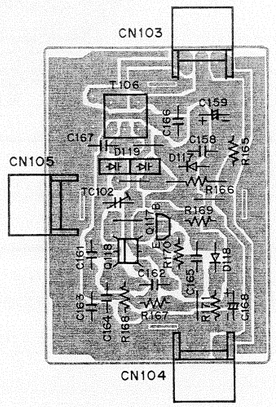
TRANSISTOR DC VOLTAGES

Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	G	D	S
Q106	2SC2839	3.2V	11.2V	2.6V	Q108	2SK241	0V	10.2V	0V
Q107	2SC2839	3.2V	11.2V	2.6V	Q109	2SK241	0V	10.2V	0V

POWER SW. P.C.BOARD
(BOTTOM VIEW)



VCO P.C.BOARD
(BOTTOM VIEW)



IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101	LA1235	2.9V	2.9V	2.9V	0V	0V	6.7V	5.8V	6.2V	6.2V	6.2V	12.6V	0V	1.1V	0V	0V	0V

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC201	LA1266	2.4V	2.4V	2.4V	0V	10.1V	10.1V	10.1V	0V	3.8V	2.3V	2.6V	3.2V	0V	1.4V	2.0V	0V	0V	2.4V	2.0V	0V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		3.9V	3.9V	3.9V	3.0V	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC301	LA3450	5.5V	1.7V	4.4V	4.9V	4.2V	7.8V	2.7V	2.7V	6.2V	12.7V	5.5V	4.7V	6.2V	0V	2.3V	5.5V	5.5V	5.5V	5.5V	5.5V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		5.5V	5.5V	5.5V	5.5V	0V	0V	5.5V	12.6V	—	—	—	—	—	—	—	—	—	—	—	—
IC302	TC4066BP	5.5V	5.5V	5.5V	5.5V	13.5V	13.5V	0V	5.5V	5.5V	5.5V	5.5V	0V	0V	13.5V	—	—	—	—	—	—
IC303	NJM2068S	12.5V	0V	0V	0V	−10.8V	0V	0V	0V	12.5V	—	—	—	—	—	—	—	—	—	—	—

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8
IC401	NJM79M12	0V	−22.8V	−11.8V	—	—	—	—	—
IC402	LA5667	18.0V	0V	5.0V	18.0V	5.6V	2.0V	13.5V	—

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC501	TMP47C870N	−29.9V	−25.5V	−11.6V	−15.6V	−21.8V	−18.6V	−14.9V	−11.9V	−18.5V	−25.1V	−25.7V	−21.8V	−15.6V	0V	3.3V	0V	0V	0V	2.3V	2.6V
		21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
		5.3V	4.9V	0V	0V	0.6V	0V	1.1V	4.7V	4.8V	0V	0V	0V	0V	0V	5.2V	4.3V	6.2V	6.0V	0V	0V
		41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
		6.1V	6.1V	0V	5.7V	0V	0V	0V	−29.6V	5.4V	5.4V	−26.9V	−26.8V	−26.7V	0V	−26.7V	−26.6V	−26.7V	0V	−26.9V	−25.4V
		61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
		−25.3V	−25.3V	−12.8V	5.4V	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
IC502	TC4093BP	5.2V	0V	6.1V	0V	0V	5.2V	0V	5.5V	5.5V	0V	0V	5.1V	5.1V	6.1V	—	—	—	—	—	—

IC PIN NUMBERS DC VOLTAGES

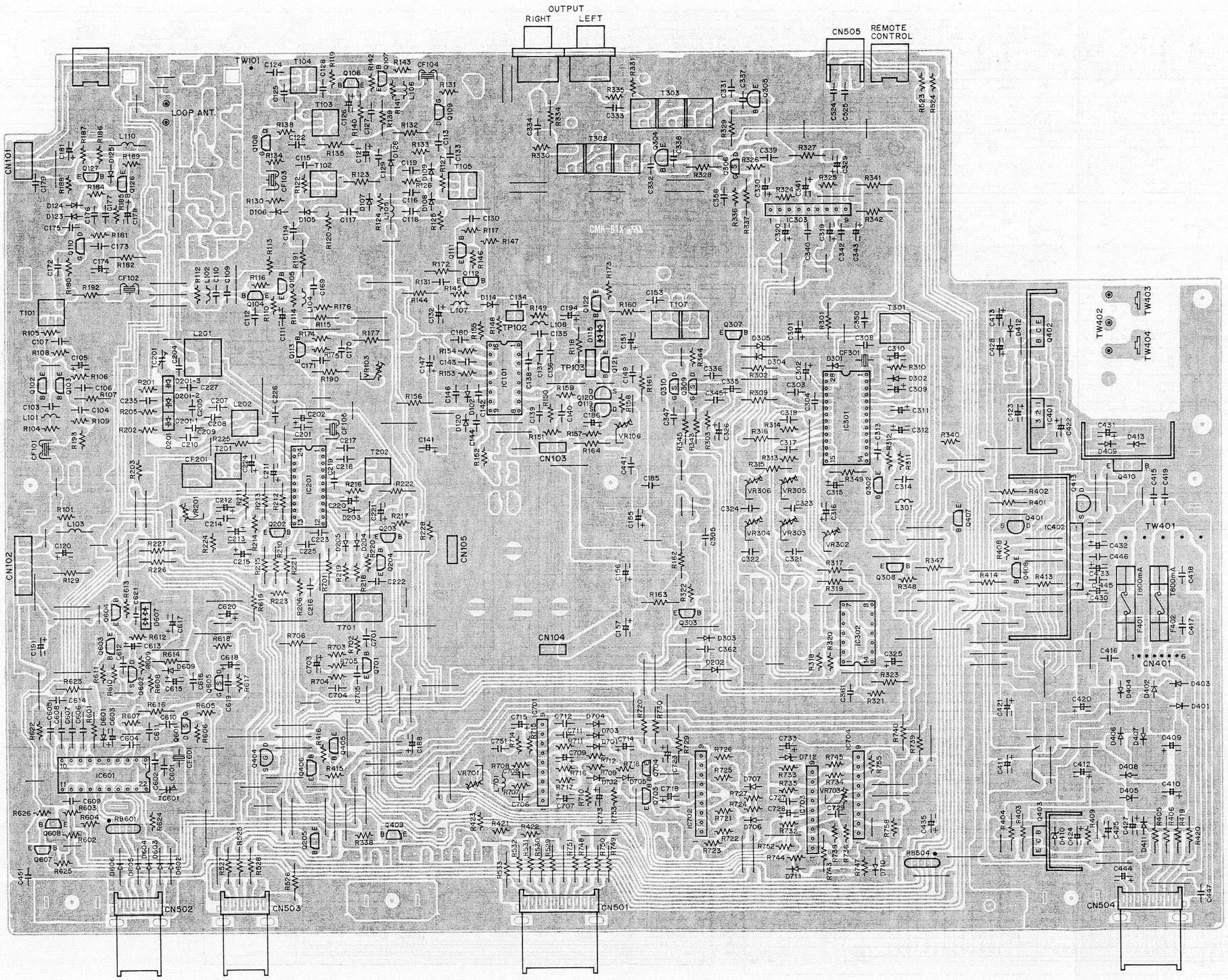
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC601	LM7000	1.6V	0V	1.3V	1.5V	5.1V	5.1V	2.8V	0.1V	0.1V	0.1V	0V	9.9V	0.1V	0V	5.2V	0V	0V	0V	0V	1.6V

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10
IC701	LA1060	1.5V	1.5V	1.4V	1.0V	0V	0V	0V	0V	12.0V	—
IC702	BA715	12.7V	0V	0V	0V	−10V	0V	0V	0V	12.7V	—
IC703	BA715	0V	0V	0V	0V	−10V	0V	0V	3.6V	0V	—
IC704	BA715	10.2V	0V	0V	0V	−10V	4.0V	4.0V	4.5V	10.2V	—

NOTES:
All voltages indicated in the tables are measured under the following conditions.
a. Use a V.T.V.M.
b. All voltages ±10 % with respect chassis ground.
c. No signal as input terminals.
d. Band selector switch to FM 87.5 MHz/ST (MUTE) position.
e. AC input at 220 volts 50 Hz.

TUNER PRINTED CIRCUIT BOARD
(BOTTOM VIEW)



SCHEMATIC DIAGRAM